The Finlandisation of Shipbuilding

Industrialisation, the State, and the Disintegration of a Cold War Shipbuilding System

Saara Matala
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Abstract

The Cold War shaped industrialisation through the politicisation of technology. This thesis examines the expansion and downscaling of the Finnish shipbuilding industry from 1952 to 1996, which has been claimed to be a contingent rather than merely correlated result of the Finnish-Soviet bilateral trade relationship. By exploring the agency of a small country navigating the period of international confrontation and competition, this study contributes to our understanding of the material and economic consequences of the global Cold War.

The Finnish shipbuilding industry is conceived as a techno-economic system—a heterogeneous web of components that contributed to the profit-driven building of maritime technology. The conceptualisation draws from studies of Large Technological Systems (LTS), but it adds to the LTS theory an equally strong economic dimension alongside the technological one, and examines industrial transformation as dynamics between system stabilisation and change. The study addresses three specific research questions: How the shipbuilding system developed its structure and national style; how it interacted with the state; and how it disintegrated during the latter part of the Cold War.

The study contributes to the LTS theory by showing how the system disintegration re-politicises elements that had established as ordinary. Consequently, the end provides a way of re-considering the politics embedded in the mature system as well. The gravity of the empirical research lies in the five case studies that approach the techno-economic system from five perspectives: technopolitics of shipbuilding, non-commercial cooperation, bilateral institutions of trade and payment, industrial reorganisation, and state aid and financing.

The study shows how the Finnish shipbuilding adopted certain elements and gained momentum because Finland’s position next to the Soviet Union introduced a novel set of constrains and opportunities. Critical for the industrial development was, however, the Finnish agency in adjusting and adapting to these international conditions. The Finnish Cold War shipbuilding system expressed a recognizable national style in how the companies controlled the fluctuation and insecurities of the business. The state actors often subscribed to the system goals but they also used the shipbuilding system as a technopolitical tool to address national security, national prestige, and national welfare. The disintegration of the Cold War system was triggered by external changes after the 1970s, but initially the system momentum seemingly increased.

Keywords Industrialisation, Large Technological Systems, Cold War, Shipbuilding, Technopolitics,
Tiivistelmä

Tutkimuksessa Suomen kaupallinen laivanrakennusteollisuus määritellään ’tekn-taloudelliseksi järjestelmäksi,’ joka tarkoittaa heterogeennien komponenttien muodostamaa verkkoa. Käsite ammentaa Suurten teknologisten järjestelmien (Large Technological System, LTS) teoriaista, mutta se lisää teknologian rinnalle yhtä merkittävän taloudellisen ulottuvuuden. Teknokonomisen järjestelmän analysiin kautta tutkimus pureutuu kolmeen kysymykseen: miten Suomen kylmän sodan laivanrakennusjärjestelmä kehitti erityisen rakenteen ja kansallisen tyylin, mikä oli sen suhde valtion ja miten se hajosi kylmän sodan lopussa?


Avainsanat Teollistuminen, Suuret teknologiset järjestelmät, kylmä sodan, laivanrakennus, teknopolitiikka

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Political history was my first love. Technology and industrial change my great interest. Looking back now, it might have been clear to all except for me that I was to become a historian of the politics of industrialisation. Growing up as a researcher does not take place in isolation but is essentially a very social process. It takes several people to write a monograph alone. While I have sat in the archives, got lost in libraries, organised the data, written the analysis, made the mistakes, and rewritten the manuscript again all by myself, there have always been a number of people providing support, inspiration, and guidance. Those people deserve the fullest recognition. Without them, this thesis would not be as it is now.

First of all, I want to acknowledge my supervisor Dr. Mats Fridlund, who opened my eyes to the social construction of material artefacts and the myriad interaction between technology and society. To a great degree, he made me a historian of technology. He introduced me to the classical texts of the field as well as to the Scandinavian and American scholarly communities. Mats, I appreciate your optimism and trust in that I can write better. Before I left for Boston, you told me that in Academia, everyone is so very smart that it is impossible to outsmart them. Instead, one should try to be kind. That is perhaps the single best advice I have got. I do my best to keep it in mind.

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I had two outstanding scholars as my pre-examinators: Professor Susanna Fellman from the University of Gothenburg, and Associate Professor Per Högselius from KTH Royal Institute of Technology. I was honoured that two historians, whose work I had been reading, studying, and enjoying, took upon themselves to evaluate my long—and undeniably exhaustive—work with great scrutiny. I greatly appreciate their sharp-eyed, constructive, and encouraging comments. No scholar could ask more from her examinators! I also want to thank Professor Richard Hirsh from Virginia Tech for accepting the request of being my opponent in the public defence.

At the beginning of this project, I was not a Cold War historian. I did not know what I would do with the grand old narratives of superpower confrontation. That I now feel more confident in the battle fields of the Cold War historiography, is much thanks to the Academy of Finland project Reimag – Reimaging Futures in the European North at the End of the Cold War (2013–2017). I am obligated to the leaders of the consortium, especially Research Director Juhana Aunesluoma, for inviting me to join the cooperation as an associate member. I would like to thank all the participants for fruitful discussions. In particular, the monthly meetings in Helsinki and the oral history seminars have often been productively thought-provoking. By the same token, I also want to express my gratitude to my first academic home, the discipline of political history at the University of Helsinki and especially Professors Pauli Kettunen and Kimmo Rentola. The first lectures we take, the first supervisors we have, and the first seminars we undergo as undergraduate students, have a deep impact on how we think about our discipline and research in general. You might not expect me to grow up and focus on the Cold War political history of icebreakers, but your lessons have not been innocent in this process.

I have never had an identity as a full-fledged humanist, being trained as a historian in the Faculty of Social Science and then in the School of Engineering. Yet, I found a stimulating environment within the Helsinki University community of economic and business historians. Professor Niklas Jensen-Eriksen, researchers, and doctoral students have not a few times commented on my texts and presentations and provided insightful advice and friendly support in conferences. One person in particular deserves a special mentioning. Aaro Sahari, a fellow shipbuilding historian, has been an invaluable colleague during these years as a PhD student. We have studied similar questions and different historical periods, we have agreed on most things, and disagreed on some other things in a way that often had fruitful analytical consequences. Aaro, I appreciate your endless curiosity, work ethic, and honesty. Without your research on the background, this thesis would have had a less solid foundation to build on. In addition, I want to express my gratitude to University Lecturer Sari Autio-Sarasmo from
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Not far from the MIT campus, there is a park where we used to jump cross a gateway. When jumping a bit too far and too high, it is sometimes slightly frightening. One should be a bit afraid but also have confidence. The landing is seldom perfect. Yet, taking-off is the only way to learn more. When finally jumping, for a moment there is a feeling of flying.

This thesis is not perfect, but now is time for its take-off.

Otaniemi 7.1.2019

Saara Matala
The Author’s Contribution

This study is based on the research conducted by the author. She has collected the empirical material, created the theoretical framework, analysed the data, and written the manuscript by herself. In the few cases, in which archival sources have been digitalized by another researcher, it has been stated in a footnote. When the author relies on her other research projects which have been made in cooperation with another scholar, a reference has been made to the co-written article. Author’s supervisors and other scholars have contributed by providing feedback on the manuscript.
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Oral history

Interviews conducted by the author

Other oral history sources

Parliamentary documents

Säänöskokoelman sopimussarja (SopS), Finnish international treaties

Säädöskokoelma (Säädk), Collection of Acts and Decrees

Muut valtiopäiväasiakirjat (VP), Other Parliamentary Documents

Court Decisions

Committee Reports and unpublished studies

Statistical collections, databases, and standards

Newspapers and magazines

Memoirs and diaries

Literature
List of Abbreviations

AWES Association of West European Shipbuilders

CMEA Council for Mutual Economic Assistance (Also SEV / COMECON)

CSCE Conference on Security and Cooperation in Europe (Euroopan Turvallisuus ja yhteistyökonferenssi, ETYK)

DWT Deadweight tonnage (A measure of how much a ship can carry)

CoCom Coordinating Committee for Multilateral Export Controls

EES European Economic Space (Euroopan talousalue, ETA)

EEC European Economic Community

EFTA European Free Trade Association

FCMA, Ystävyys-, yhteistyö ja avunantosopimus YYA (The Agreement of Friendship, Cooperation, and Mutual Assistance between Finland and the Soviet Union)

GATT General Agreement on Tariffs and Trade

GRT Gross register tonnage (a measure of ship’s internal volume)

IAEA International Atomic Energy Agency

MVES USSR Ministry for Foreign Economic Relations

SHP Shaft horse power (The engine power delivered to the propeller shaft)

SVL Suomen Vientiluotto Oy – Finlands Exportkredit Ab (Finnish Export Credit Ltd)

VEB USSR Bank for Foreign Economic Relations

VTL Vientitakuulaitos (The Finnish Board of Export Guarantees)

VTK Valtion takuukeskus (Finnish Centre for Export Financing, founded in a merger of VTL and SVL 1989)

OECD Organisation for Economic Co-Operation

OEEC Organisation for European Economic Co-operation
1. Introduction

1.1. Origins and Rationale

In 1984, the British newspaper The Daily Telegraph published an article titled ‘Finlandisation of Shipbuilding’ about Finnish shipyards flourishing when the other European shipbuilding countries struggled. While British shipyards, once the unquestioned global leaders, hardly stayed afloat, Finnish shipyard order books were full thanks to their specialisation and trade with the Soviet Union. Moreover, the Finnish shipyards had survived without extensive state interventions in a fashion that seemed to evince their remarkable competitiveness in the tough global market.1 The article was circulated within the Finnish Ministry of Foreign Affairs as well as among Finnish shipbuilding companies. The tone of the article was positive, expressing praise rather than resentment, but for Finns it discordantly combined an aspect of Cold War development the Finns were unanimously proud of—rapid growth and technological advancement—with an aspect of Cold War rhetoric that Finns found offensive: ‘Finlandisation’. The underlying historical question this study concerns itself with is how decisive the connection between the Finnish shipbuilding development and the Cold War political framework was in shaping the industrial transformation.

The concept of Finlandisation referred to the process of a sovereign state accommodating itself to a superpower’s interest. Although it was originally introduced to discuss political development in Western Europe and not Finland in particular, the fact that it had Finland’s name on it made the conceptualisation way too personal for the Finns to be only a theoretical abstraction.2 Instead of being a descriptive concept, ‘Finlandisation’ depicted three different debates about the agency of a country and its people within the international order: Theoretical, diplomatic, and personal.3 First, Finlandisation coined a theoretical discussion in the field of international relations as political analysts adopted it to refer to an asymmetric power relationship between a large and a small country and the policy of collaboration as an

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3 “Finlandisation” has two possible and grammatically correct translations in Finnish, a transitive and intransitive one. The transitive verb Suomettaminen means “making something like Finland” and indicates the agency of the Soviet Union. The intransitive Suomettuminen means literally “becoming like Finland” emphasises the Finnish own agency. Kallenautio, Suomi kylmän rauhan maailmassa, 1995, 305.
alternative to confrontation. In here, the Finnish experience was merely used as a model for other countries to follow or not to follow. Second, the definition of Finlandisation was in the core of a diplomatic debate on the nature of the Finnish-Soviet relationship. ‘Finlandisation’ evoked overwhelming Soviet political dominance over its small neighbour in a way that forced Finland to compromise some principles of a capitalist democracy even though it was not under occupation. Unable to remove the word from the international vocabulary, Finnish politicians and diplomats in the 1970s and 1980s strived to re-define it in a positive tone as peaceful and mutually beneficial co-existence. Often, they invoked the positive impact of the Soviet trade on the Finnish industrial and economic development.

Third, Finlandisation captured the post-Cold War reckoning of Finns coming in terms with their past. In here, ‘Finlandisation’ implied Finnish initiative that went beyond the necessary bare minimum to gain political or economic advantage from the close connections with Moscow. In essence, the controversy surrounding ‘Finlandisation’ is concentrated on the following questions: Did the Cold War conflict place Finland in a situation where the Finns had no choice but to adapt to the proximity of the Soviet Union? How much did Finland have leverage to steer its own development? How and by whom was this leverage exerted?

When the British journalist chose the somewhat witty and seemingly obvious wordplay ‘Finlandisation of Shipbuilding’ as the title for his article, he was probably unaware of how overloaded the concept was. The Daily Telegraph’s article lacked critical analysis and rigorous research. Yet it was revealing as the title coined a connection between the Finnish-Soviet Cold War relationship and Finnish shipbuilding as though the case was generally familiar beyond the states involved. The article aligned well with the established knowledge in Finland that the Soviet trade during the Cold War made shipbuilding a stable, profitable, and politically-

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6 A great but less known example of these efforts is a master’s thesis on Finlandisation written by a student of Monterey Naval Postgraduate School in 1980 with the aim to determine “what exactly was Finland’s position with respect to the Soviet Union”. Based on interviews and information provided by the Finnish Ministry of the Foreign Affairs, the student concluded that Finlandisation should be understood in positive terms and that “[t]he road that Finland is being led down by President Kekkonen is in as safe and as effective a direction as our ideals of western democracy could hope for.” Paul Henry Nelson, "Soviet-Finnish relations: Finlandization or fraternization?" Thesis, Monterey, California. Naval Postgraduate School, 1980, 95.

7 Some historians underline that just realism in foreign affairs does not account for Finlandisation but that the pejorative concept refers only to the Finnish action that was not critical for national survival. Hentilä, Kun historiankirjoitus kohtaa suometumisen, (2001), 58.
supported business. It would later also resonate with the equally common assertion that when the Finnish shipbuilding industry was scaled down at the end of the 1980s, it was because of the dissolution of the Soviet Union.

The non-military influence of a powerful external force over the internal development of a sovereign small country is not an idle, abstract question but constitutes a central part of how we understand the effect of the Cold War on industrial development and the agency of a small country. After the Cold War, the prosperity of the Finnish Cold War shipbuilding industry has been a key argument that Finland not only survived but prospered as well. Citing Finland’s social and economic progress during the Cold War, some commentators today still use ‘Finlandisation’ as a positive concept, suggesting that compromise can be a successful strategy for countries in the vicinity of Russia.

Despite the eagerness of Finnish and foreign politicians and scholars to revisit the concept of Finlandisation, it has rarely been adopted as a topic of an empirical study by academic historians. The headline ‘Finlandisation of Shipbuilding’ —in the original article and of the present study—raises rather than puts to rest a number of questions. Indeed, what would it mean?

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There were three main reasons to pick the controversial concept as the title. First, it refers to the Soviet influence on the Finnish internal development. Finlandisation is simultaneously an abstraction of any asymmetric power relationship and a painfully woven strand in the very fabric of Finnish national self-understanding of the past. Second, it locates the thesis in a certain geographical place. It attaches the weight of certain political controversies to industrialisation, and underlines the national embeddedness of the stories that surround the history of shipbuilding. Third, the concept of ‘Finlandisation’ contextualises the study within a certain historical era; the Cold War. By so doing, it also suggests that the Cold War was a distinct period in the Finnish shipbuilding history.

In its vagueness, the topic ‘the Finlandisation of shipbuilding’ captures the quintessence of the historiography of the history of technology and business in Finland during the Cold War. This thesis employs it as a starting point for the investigation of the relationship between Finland and the Soviet Union and the relationship between state and industry, both shaping the Finnish shipbuilding.

As an analytical concept, Finlandisation is too vague and fuzzy to facilitate an accurate analysis of industrialisation. Instead of a concluding statement, the ‘Finlandisation of Shipbuilding’ constitutes the opening question of this historical inquiry.

The suggested conjunction between Cold War national security concerns and the concurrent industrial transformation makes Finnish shipbuilding a case study of the Cold War history of technology and business, which is concerned with how the Cold War political framework pushed the development of trade and industry into new trajectories. However, to start a study about the Cold War effect on Finnish industrialisation, we need to identify what we actually know and distinguish it from what we only assume. Academic research, oral history, common discourses, and memoirs intermingle in narratives that constitute the essence of the national folklore of Finnish-Soviet Cold War affairs. Much about the Finnish Cold War ship trade is unknown. Much of what is known is inaccurate.

To renew historiographic enquiry, we need new source material or new ways to approach the data already available, preferably both. In this thesis, Finnish shipbuilding industry is conceived as a socio-economic system, a heterogeneous web of technical, institutional, and human components. In concert with each other the system components contributed to the formation of the shipbuilding industry and policy and expressed a distinct national style that differentiated the Finnish shipbuilding system from those in other countries. The principal function of this system was to generate revenues for profit-driven companies through building

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11 For a versatile edited volume presenting the state-of-the-art, see: Science and Technology in the Global Cold War, eds. Naomi Oreskes and John Krige (Cambridge: MIT Press, 2014).
and developing vessels, but it constituted more than the mere technological elements that went into production of ships. The techno-economic system of shipbuilding existed to solve certain problems within a socially-embedded context, and it was connected by several socio-political anchors to state-level political decision making.

I use the ‘techno-economic system’ as an analytical tool mostly following the tradition in studies of Large Technological System (LTS). Since I chose not to use the actor's concept ‘Finlandisation,’ I employ the terms ‘system’ and ‘national style’ to scrutinize the dynamic between the various components within the industry as well as to examine the interaction between the industry and the state.

The rationale behind using ‘techno-economic system’ instead of just ‘technological system’ was that both technological and economic factors were equally important in shaping the industrial transformation. In this sense, my understanding of ‘techno-economic system’ is in harmony with the similar concepts that align technology with economy. For instance, Claes-Fredrik Helgesson has used ‘techno-economic system’ in his study on Swedish telecommunications to emphasise the interwoven nature of technological, economic, and social elements. More famously, the neo-Schumpeterian economist Carlota Perez has used the concept of techno-economic paradigm to analyse the impact of technological change in socio-economic development.

By focusing on Finland, this thesis contributes to the transnational turn in international history. After the Cold War, an increasing number of historians have criticised traditional superpower-centric Cold War history. Economic, social, and cultural historians using transnational and micro-history perspectives have demonstrated how an isolated analysis of


15 Particularly the interaction between financial capital and the upsurge of new technologies when they revolutionise the structure and practices of the economy. Carlota Perez, Technological Revolutions and Financial Capital: The Dynamics of Bubbles and Golden Ages (Cheltenham: Edward Elgar, 2002).

the polarised high politics may not provide an accurate picture of the Cold War in different national contexts.\textsuperscript{17} For instance, Sari-Autio Sarasmo and Katalin Miklossy have formulated a multipolar and multi-layered framework for Cold War studies.\textsuperscript{18}

The idea that a more fruitful level of analysis could be found somewhere in the middle of a continuum between micro and macro instead of at the extreme points has also been suggested by historians of technology. Thomas Misa has advocated meso-level analysis as a method of fitting together macro-level studies, that imply structural technological determinism, with micro-level approaches, that emphasize the social construction of technology.\textsuperscript{19} Structures and high politics were not insignificant. They created the framework for the individual company-level decision makers on enabling, promoting, and restricting certain courses of action.

The rest of this chapter delineates the research aims and introduced its historiographic, methodological, and theoretical foundation. The next section 1.2 defines the research questions this study aims to answer. Section 1.3 ‘Politics of Industrialisation’ presents the key historiographic discussions related to the politicisation of technology production and trade, and Cold War Finland as a place for an industry to mature. The section after it builds on previous literature and develops the theoretical framework applied in this study. Section 1.5 discusses sources and source criticism. The final part of this introduction describes the methodological choices and the overall structure of the thesis.

\textbf{1.2. Research aims and questions}

The study has three overarching research objectives. They are formulated as questions that all the following chapters approach from their different perspectives. The main part of the empirical research is conducted in the form of five case studies that examine the disintegration of the Finnish Cold War techno-economic shipbuilding system from different angles: shipbuilding in international relations, East-West scientific-technical and industrial


cooperation, Finnish-Soviet bilateral trade institutions, industrial reorganisation, and state aid and financing.

The first objective is to examine how the Finnish techno-economic shipbuilding system developed along a distinct trajectory during the Cold War in Finland. The specific research question is how the system adopted a certain structure and culture, whether it gave the chronologically and geographically bordered techno-economic system a recognisable flavour. In this, I place a special emphasis on analysing the shipbuilding system’s national style; in the way it is understood within scholarship of LTS. National style consisted of processes, practices and technologies which were established as ordinary within a certain system.20

Another aspect of this question is whether the Finnish techno-economic system building was a contingent rather than merely correlated product of the Cold War: Did the transformation of the Finnish shipbuilding system took a different course because of the Cold War, and did it underwent a distinct quantitative and qualitative change at the end of the Cold War. The Cold War was not the only influential framework potentially shaping the industrialisation. Domestic culture and global economic competition also contributed to the system’s development. In that sense, it is necessary to investigate to what degree Finnish Cold War shipbuilding was aligned with the development within international maritime history where globalisation rather than the Cold War that triggered the deindustrialisation process of European shipbuilding21. In addition, Finnish Cold War shipbuilding history needs to be reassessed in the light of research within Finnish economic and industrial history that has argued for a paradigmatic shift in the industrial dynamic during the 1980s, from a specific Finnish form of cooperative capitalism towards liberal, competitive, and open economy.22

22 Pertti Alasuutari, "Suunnittelutalousdeusta kilpailutalousenteen. Miten muutos oli ideologisesti
The second objective is to add to our knowledge of the interplay between politics and industry during the Cold War. The question the individual sections address is how the technopolitical interaction fused the Finnish state and Finnish shipbuilding in foreign affairs or in domestic trade and industrial policy. By unravelling the interwoven threads of politics and business, I seek to investigate where the dynamic demarcation line went between public and private agency in industrial development: Who presented the Finnish shipbuilding system, spoke for it, and acted for it? Did the Finnish shipbuilding system adjust, accept and promote Finnish national security interests?

While the state-level decisions on foreign trade and domestic industrial policy framed the shipbuilding operations, the shipbuilding system also had potential to shape political, social, and cultural changes in Finland. It provided nationally important assets that the government alone could not produce. These assets arrived in the form of industrial employment opportunities, export revenues, and artefacts of nation building. The underlying question here is whether political and economic actors and issues were so closely related that the state organs could have constituted a part of the shipbuilding system, as in a way, they shared its goals or controlled it.

The third objective is to contribute to our understanding of system disintegration. The question is in what way, why and when the techno-economic shipbuilding system abandoned the qualities that made it distinct during the Cold War—the characteristics of its Cold War national style. It is a truism that the end of the Finnish Cold War shipbuilding system did not denote the end of Finnish shipbuilding. However, the structure and style of the post-Cold War Finnish shipbuilding system was radically different than those in the 1970s. In that way, it indeed looks like the end of the Cold War ushered in a new era also in the Finnish shipbuilding.

LTS scholars have argued that while political and technical struggles characterize the early phases of system building, the mature system gathers momentum, becomes more independent from its environment, and eventually may turn seemingly apolitical or even invisible. Thus,

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the hypothesis that inspires this project’s research focus on the end rather than the beginning is that the system disintegration reawakened the dormant political tensions in the system. In that sense, the transformation processes that shaped the end of the Cold War system, instead of those that constructed its beginning, provides a way of re-considering the politics embedded in the mature system. Moreover, the difficult challenges at the end of the Cold War, rather than the lucrative opportunities at its beginning, compelled the actors to formulate their strategies within a more restricted framework to explicitly re-evaluate their priorities and future expectations. This process provides insight into how the industrial and state actors reimagined future shipbuilding without the Cold War context to which they had become accustomed.

1.3. Politics of industrialisation – Historiographic foundation

This section situates the thesis within its relevant historiographic fields. I position this thesis in the history of industrialisation at the crossroads of political history, business history, and the history of technology. Political history is interested in the myriad ways organisations and processes can be political and become political; the history of technology explores the man-made material assemblages applied to change and maintain the world; business history is the study of contextual, social aspects of corporate activity. Stemming from all these three historiographic traditions, this thesis is inter-disciplinary by its nature. However, for the sake of clarity, most of its conceptual choices are made in accordance with the history of technology.

The history of industrialisation is commonly understood through 'revolutionary' phases in which the invention or application of new power sources and production systems has a profound impact on large-scale production in a way that reshapes the established social order.25 In the Finnish context, industrialisation typically refers to the radical but temporary turn when people changed their framework of existence from agrarian to industrial society from the late nineteenth century to the middle of the twentieth century. Somewhat differently from this, I conceptualise industrialisation as a continuous process rather than a revolutionary and temporally-bound event. Industrialisation, as an on-going industrial transformation with extensive political, economic, and cultural ramifications, continued to be a force for social change in post-war industrial Finland.

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25 For instance, the first industrial revolution was triggered by the introduction of steam engine. Oil, steel and electricity and the introduction of combustion engine characterized the second industrial revolution before WWI. The third industrial revolution, the “digital revolution” or switch to the “New Economy” started in the 1970s or 1980s, driven by advancements of digital technology, especially personal computers, the internet and information and communication technology. Peter Stearns, The Industrial Revolution in World History (Boulder: Westview Press, 2012); Brooke Hindle & Steven D. Lubar, Engines of Change: The American Industrial Revolution, 1790-1860 (Washington, DC: Smithsonian Institution Press, 1986).
Several scholars with different academic backgrounds have explored the relationship between state power and industrial development. Nevertheless, this is not a field but rather a shared research interest. Despite historians of technology, business, and diplomacy being accustomed to different scholarly traditions and conceptions, I see no reason to build a high fence between the fields. ‘The past was change’, as the grand old business historian Alfred Chandler once told the grand, slightly younger, historian of technology Thomas Hughes.\textsuperscript{26} In this study, then, I investigate industrial change in the past.

The combination of political, technological, and economic approaches in this study of industrial change should not be taken as an expression of methodological anarchism or an attempt to undermine the tradition within these disciplines. Technology-oriented business historians have long extended their research interests into the immaterial elements of technological products and machines.\textsuperscript{27} Business-oriented historians of technology, for their part, have paid attention to market forces, economic feasibility, and supply and demand in technological development and technology transfer.\textsuperscript{28} Finnish business historians have bridged the gap between political and industrial history with the overarching statement that the history of Finnish business is history of Finland.\textsuperscript{29} Besides these, there are several other concepts and research traditions that combine the interests in political might, money, and materiality.\textsuperscript{30}

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\textsuperscript{27} Chandler pays attention to the technological development in his study on the rise of American big business: the emergence and development of new large-scale production technologies and means of mass transportation created new imperatives and opportunities for corporate managers, and thus facilitated the corporate changes, see Alfred Chandler Jr, \textit{The Visible Hand: The Managerial Revolution in American Business} (Cambridge: Harvard University Press, 1993).
\textsuperscript{28} In studies of technology transfer, economic factors are frequently pointed out, for instance Svante Lindqvist, \textit{Technology on Trial: The Introduction of Steam Power Technology into Sweden, 1715-1736} (Diss. Uppsala universitet, 1984), 295-296. For further examples, see Petri Paju and Thomas Haigh, “IBM Rebuilds Europe: The Curious Case of the Transnational Typewriter,” \textit{Enterprise & Society} 17, no. 2 (2016): 265-300; Martin Collins, “One World … One Telephone: Iridium, One Look at the Making of a Global Age”, \textit{History and Technology} 21:3 (2005), 301-324.
\textsuperscript{30} Scholars interested in strategic technology have employed a number of different iterations of the state-industry nexus, such as the iron triangle and the military-industrial complex, to study the relationship between state politics and industrial development: \textit{The Science-Industry Nexus. History, Policy, Implications}, eds. Karl Grandin, Nina Wormbs & Anders Lundgren, and Sven Widmalm (Sagamore Beach: Science History Publications, 2004); H. Etzkowitz & L. Leydesdorff, “The Dynamics of Innovation: From National systems and “Mode 2” to Triple Helix of University-Industry-Government Relations”, \textit{Research Policy}, 29:2 (2000), 109-123. The triple helix is a theoretical framework for
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In this study, I draw on two conceptual approaches to the relationship between politics and industrial transformation, namely politics of institutions, and technopolitics.

Colleen Dunlavy has studied the relationship between national political structures and industrialisation by comparing the development of railways in the USA and in Prussia. She argues that the different institutional framework was the fundamental reason for divergent national developments.\(^{31}\) In her study ‘Politics and Industrialisation’ (1994), Dunlavy draws inspiration from the new institutionalism in the early 1990s that turned scholarly interest from neo-classical theory of economic performance to the institutional context.\(^{32}\)

As institutions consist of rules, procedures, and norms that regulate interaction between individuals and organisations, they determine the distribution of power. Dunlavy’s approach invited historians to look at the politics inherent in institutional structures.\(^{33}\) In my study, I pay attention to the political construction and function of institutions related to trade and financing. I focus on those institutions that reduced economic uncertainty and facilitated trade, in order to understand the bearing that the institutional context had on the actors, action, and events influencing the transformation of the techno-economic shipbuilding system.

Gabrielle Hecht has conceptualised the mutually shaping relationship between politics and industrial development through the widely influential term of ‘technopolitics,’ defined as ‘the strategic practice of designing or using technology to constitute, to embody or to enact political goals’.\(^{34}\) Her approach stemmed from her critique of technology historians, who restricted their attention to the trajectories of technological development, and her critique of cultural

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33 Colleen Dunlavy, Politics and Industrialisation, 1994, 5-6.
and political historians, who neglected technology or considered it merely as a factor external to social development. With the concept of ‘technopolitics,’ she turned scholarly focus on to the mutually shaping interaction between the social and the material, simultaneously problematizing both the politics and the technology.³⁵

Both Dunlavy and Hecht focus on the national dimension of technological development and political meanings that industrialisation acquired in their analysis. While Dunlavy concentrates on the local national institutional setting, Hecht discusses the relationship between national identity and technological power.

There are many ways in which technology may get politicised and a number of institutional settings that may shape industrial development. To obtain precise analytical instruments to scrutinise the Cold War politicized technology and technology transfer, I introduce three novel categories of technopolitics: The technopolitics of national security, the technopolitics of national prestige, and the technopolitics of national welfare. In addition, I single out two main institutional regimes that were particularly relevant for the Finnish shipbuilding industry—the institutions of Finnish-Soviet Cold War economic relations and the Finnish culture of consensus. The following two sections address the historiographical discussion related to the politicisations of Cold War technology and the institutional contexts of industrialisation in Finland.

**Politicisation of technology in the Cold War**

Studies of Cold War techno-science have highlighted the influence of state concerns over national security. Prominent international studies have exemplified how the Cold War strategic and ideological confrontation and competition shaped industrial development in directions that were unlikely to have been followed otherwise.³⁶ The strategic technology

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projects to ensure national security, such as digital computing and nuclear missiles, were the most obvious examples of the politicisation of the Cold War technology. Technology did not start the Cold War, but it did have an unmistakable effect on the tools that the governments chose to use in order to protect their territories and people. The vast scale of politically supported techno-science projects, the enormous effects of the new technologies, and the new linkages between the politics and the technological development were in many ways unprecedented.\textsuperscript{37} In the USA, state funding for research and development surpassed its wartime peak already in the 1950s and skyrocketed in the aftermath of Sputnik, fuelled by fears that the Soviet Union might eventually outperform the USA.\textsuperscript{38} Even in neutral countries such as Sweden, governments allocated most of their research funding to the defence sector.\textsuperscript{39}

This political patronage scaled up investments in techno-science. Another far-reaching effect of Cold War big science projects on technological development was structural. The strategic R&D projects required coordination of large, inter-disciplinary, and hierarchical organisations, enormous specialized research instruments, and generous budgets. All this altered how research projects were generally organised.\textsuperscript{40} In the competition for politically appropriated research funding, applied science and military applications trumped theoretical basic research and civilian technology projects.\textsuperscript{41} As Stuart Leslie argued, science was anything...
but academic in the Cold War America. Technology policy was for a significant aspect drafted by the military.42

Finland was on the losing side in the Second World War and the Paris Peace Treaty of 1947 regulated the Finnish armed forces until 1990.43 Cold War Finland had no distinct military-industrial cluster in the way that the Cold War historians typically understand the concept, nor any large-scale strategic industrial re-structuring programmes motivated by the national security concerns. Contrasting with the development of the American or Swedish military-industrial clusters, in Finland national security concerns restricted rather than facilitated the development of technology towards military solutions. In fact, especially at the beginning of the Cold War, national security considerations diverted Finland away from rather than towards technology projects with direct military applications for defence technology.

However, the overemphasised peacefulness of the Finnish dual-use technological projects, such as those related to nuclear physics or computers, did not express a lack of interest in defence applications, but rather the materialisation of the policy of enforced neutrality in the Cold War. Even Finnish technology procurement became a manifestation of the policy of neutrality as the Finnish governments allocated military technology contracts evenly between east, west, and neutral countries.44

While the construction of submarines and naval fleets constitute a self-evident part of the Cold War history of technology, Cold War national security concerns are rarely present in histories of commercial shipbuilding. Typically, Cold War confrontations had merely an indirect


43 In 1990, the Finnish government stated that Finland would stop complying with the military restrictions included in the Paris Peace Treaty. As Marjo Uutela has presented in her dissertation, this decision, which was known as "Operation Pax", was triggered by the German-reunification but shaped to a greater extent by Finnish-Soviet relations. Marjo Uutela, *Operaatio Pax: Pariisin Rauhansopimuksen Tulkinnat Ja Saksan Kysymys Suomen Ulkopoliitikassa 1987-1990* (Diss. University of Helsinki, 2017).

44 Petri Paju has discussed the interaction of different interested groups and interests in the Finnish national computer project in the 1950s, arguing that the needs of the Finnish defence forces for digital computing were among the arguments used in the debate. Petri Paju, "Ilmarisen Suomi" ja sen tekijät. *Matematiikkakomitea ja tietokoneen rakentaminen kansallisen kysymyksenä 1950-luvulla* (Diss. University of Turku, 2008), 149-157.
influence on merchant shipyards when international tensions motivated governments to promote domestic industrial production and power.\textsuperscript{45}

Despite the ubiquitous military concerns, the politicisation of technology during the Cold War was about more than just national security. Often, state interest in technological development stemmed from a desire to promote national prestige. Nationalistic aspirations inspired governments and other interests group to initiate, conduct, and support technological projects while technological artefacts and scientific findings reciprocally supported national ideas of self-sufficiency, modernity, and prowess.\textsuperscript{46} These techno-nationalistic endeavours stemmed from the rise of modern nationalism long before the twentieth century, but during the Cold War, competitive industrial branches and techno-scientific competence became prerequisites for a modern sovereign industrial nation.\textsuperscript{47}

This international race for modernity included participants beyond the two superpowers. Regardless of the size of the country, domestic capacity and competence, techno-scientific development became critical building block of national sovereignty and identity.\textsuperscript{48}

The national intellectual and material resources that Finland had for large-scale heroic engineering projects were extremely restricted during the first part of the Cold War. Nevertheless, Finland wanted to be a modern industrial country, too. The forestry-based exporting of paper and pulp remained the single most important sector of the Finnish economy, but industrial design and metal engineering evolved into an alternative way to

\textsuperscript{45} A rare exception of this rule is South Korea. Lars Bruno and Stig Tenold have argued that the concerns over national security as a result of the increasing Communist military threat from China and North Korea was among the reasons for the South Korean government to launch an extensive industrialisation program to promote shipyards. Lars Bruno & Stig Tenold, "The Basis for South Korea's Ascent in the Shipbuilding Industry, 1970–1990", \textit{The Mariner's Mirror}, 97:3 (2011) 201-217.


\textsuperscript{47} Hecht, \textit{Radiance of France}, 1998, 39; Sari Autio-Sarasmo, “Technological Modernisation in the Soviet Union and Post-Soviet Russia,” 2016, 80; The tension between international science and national uses for scientific knowledge is, of course, older than the Cold War. According to Paul Forman, the contradictory union of the idea of international knowledge creation which transcends national boundaries and the idea of national origin and affiliation of individual scientists and scientific discoveries was already established by the mid-seventeenth century. Paul Forman, "Scientific Internationalism and the Weimar Physicists: The Ideology and its Manipulation in Germany after World War I," \textit{Isis} 64, no. 2 (1973), 153.

construct an internationally distinct national image as a modern sovereign country during the second half of the twentieth century.49

In addition to national security and national prestige, industrialisation during the Cold War was political because it was connected to national welfare. In the ideological competition over the best way to organise future societies, improvements in national welfare were fundamental to ideological supremacy. A superior society should provide its people with more than ultra-classified projects, huge explosions, and dogs and apes rocketing up to space. Domestic technologies were not free from the Cold War effect of politicisation of technology, as they provided an increasingly easy and healthy life for middle-class families.50

Industrial and economic growth promised a steadily increasing standard of living and served both as a source of legitimisation for the prevailing social order and as an antidote against rebellion.51 Small countries located within the sphere of superpowers’ interests were sometimes able to invoke their social stability to gain benefits from these superpowers in the form of technology transfer and assistance. As Sonja Schmid and Suvi Kansikas have shown, the socialist satellite states learned to use the language of fraternal cooperation to convince the Soviet Union that only economic and technological progress would ensure the cohesion of the bloc.52

The standard of living in Finland was embedded within the broader political considerations of both west and east. Particularly at the beginning of the Cold War, Western countries were worried that economic decline would push the Finnish working class towards Communism. At the same time, Moscow feared that the prolonged recession in Finland would support conservative politicians and strengthen anti-Soviet undercurrents among the Finnish political elite.53 In Finland, anti-Communism generally increased the willingness of industrial leaders


and employers’ organisations to compromise with Social Democrats and to negotiate increasing social benefits. Niklas Jensen-Eriksen has presented how the Finnish industrial organisations funded not only liberal, business-friendly right-wing politicians but all non-Communist parties, social democrats included.54

Shipbuilding historians exploring the entanglements between the state and shipbuilding often turn their focus to the national welfare aspect of shipbuilding politics. Shipbuilding was an industry with a considerable impact on local employment, high fixed costs, a long planning horizon, and an extremely volatile market.55 Often this made state intervention necessary in order to establish or maintain shipyards.

Historians have applied different conceptual tools to position shipyards within the broader political, economic, and cultural context. Some authors have chosen to focus on geographically-fixed locations, such as a river, and to analyse shipbuilding-related operations within a restricted area.56 Håkon With Andersen analyses the evolution of Norwegian maritime industries as an interplay between two types of companies within a national context. He distinguishes between frontline companies—shipping and shipbuilding firms, which are all restricted by fixed capital investments and exposed to international competition—and support institutions, such as brokers, classification societies, and insurance companies, which are integral to the frontline companies but experience a different kind of market dynamic.57 Recent industrial surveys typically employ a cluster framework in order to analyse the dynamic interaction among the maritime industrial companies in a locally restricted area.58

Given the variety of mechanisms that linked national policy-making and technological development, it is difficult to demarcate the mechanisms that politicized technology because of the Cold War from those politicizing technology during the Cold War. Moreover, the Cold War confrontation and competition politicised technology, technological development, and

56 Nils von Knorring, Aurajoen veistämöt ja telakat (Espoo: Schildts Förlags Ab, 1995).
technology transfer in new ways, but did not politicise all technologies equally or in the same way. By pointing out this variation in Cold War technopolitics, this study adds to a more nuanced and accurate understanding of the politics of industrialisation during the Cold War.

The Special case of Cold War Finland

The ‘special relationship’ is a common term in Finnish Cold War historiography and refers to Finnish-Soviet affairs. It is such an overarching element in Finnish Cold War international relations that the point when Finland stopped being *sui generis*, a kind of its own, demarcates the end of Cold War Finland in several analyses.\(^\text{59}\) The undefined ‘specialness’ hides the bitter controversy about the nature of this relationship. ‘Special’ is the smallest common denominator that is accepted both by those commentators who mean merely the negative influence of a foreign power over Finnish internal affairs, and those who emphasised the positive aspects of peaceful coexistence. From both perspectives, Finland as a Cold War ‘special case’ implies that the country’s geopolitical position as a neutral country in the Soviet sphere of interests influenced Finland’s domestic decision-making, as well as other countries’ decisions regarding Finland.

In 1948, Finland signed a bilateral security pact with the Soviet Union. The ‘Agreement of Friendship, Cooperation, and Mutual Assistance’ (*Ystävyys, Yhteistyö- ja Avunantosopimus*, commonly known as the YYA-treaty, hereafter FCMA) articulated the sensitive geopolitical framework that defined Finland’s room to manoeuvre until the beginning of the 1990s.\(^\text{60}\) The FCMA treaty did not determine an alliance between Finland and the Soviet Union, but it did make Finland a *de facto* part of the Soviet security system in a time of crisis.\(^\text{61}\) Counterintuitively, as Johanna Rainio-Niemi has underlined, the Finnish Cold War doctrine of neutrality was traced back to the security pact of the FCMA treaty, because it recognised Finland’s aspiration to remain neutral in wars between other countries.\(^\text{62}\)

There were two conflicting aspirations in the Finnish-Soviet ‘friendship’, namely Finland’s desire for sovereignty and Soviet Union’s desire for security. These could co-exist in peacetime and most probably *only* in peacetime. The two post war presidents Juho Kusti Paasikivi and Urho Kekkonen made it a priority to avoid provoking the Soviet Union into retaliation, by

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\(^{60}\) The treaty obliged Finland to resist any military aggression on the part of Germany or countries allied with Germany threatening Finland or the Soviet Union through the territory of Finland, assisted by, if necessary, the Soviet army.


convincing the Soviet leaders that Finland would remain outside the superpower conflict and would not allow its territory to be used against the Soviet Union.63

This policy of neutrality is often characterized as tightrope-walking between the two blocs. The metaphor captures Finland’s acrobatic balancing between East and West over dangerous territories.64 However, as Rainio-Niemi has demonstrated, the Cold War neutrality was not a fixed state but instead a rather flexible and negotiable attribute that changed over time.65 Instead of a one-dimensional tightrope, a more appropriate figure of speech would be a narrow bike lane between heavy traffic lines. Weak and light-weight travellers had some room to manoeuvre, but they still had to be careful to avoid being run over—deliberately or accidentally.

Finnish-Soviet economic cooperation is commonly interpreted within this national security framework as suggesting that both the Soviet Union and Western powers recognised that influence on the Finnish industrial structure was an appropriate political tool for carrying out their security goals.66 Tatiana Androsova has argued that Finland’s structural transformation and Soviet trade, including the Finnish ship exports industry, was related to Stalin’s security policy. The Soviet Union needed a secure buffer zone between itself and the hostile west, and economic dependency was one way to ensure Finnish loyalty.67

On the other hand, the Western countries were prepared to grant credit for Finland’s western trade or accept exceptional clauses in international agreements in order to strengthen Finland’s western connections.68 Finland joined the General Agreement on Tariffs and Trade (GATT) already in 1950 and became an associate member of the European Free Trade Association (EFTA) through the so-called Finn-EFTA arrangement in 1961. These international organisations allowed Finland to continue regulating its imports of fossil fuels


68 Hanhimäki, ”Self-Restraint as Containment,” 1995.
and to grant the Soviet Union the same customs benefits it gave to the EFTA countries, including the status of most favoured nation.69

The Cold War influence on Finnish industrial development has been examined mostly as a part of corporation and organisation histories.70 As Markku Kuisma describes in his study of the state-owned petro-conglomerate Neste, bilateral trade was not only a Soviet tool to increase its influence in Finland; it was also a Finnish tool to gain leverage in relations with the Soviet Union.71 At the same time, researchers have noted that the Soviet share of the Finnish foreign trade, occasionally surpassing 25%, made it a potential instrument for economic warfare.72

The most comprehensive literature on the institutional impact of the Finnish-Soviet trade consists of the Bank of Finland Eastern Trade Department publications.73 In particular, Pekka Sutela, who worked as a senior researcher and an advisor in the Bank of Finland Eastern trade department and its successor Institute of Economies in Transition (BOFIT) from 1990 onwards, has been prolific in publishing on the Finnish-Soviet trade.74 Expert economists

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71 Kuisma, Kylmä sota, kuuma öljy, 1997, 256.
provide a detailed analysis of the structure and mechanisms of the bilateral trade system, but their methods tend to overlook the influence of political interests and informal practices, as well as the dimension of time. Here, historical methods can contribute to the economist-dominated discussion by examining the interaction between politics, trade mechanisms, and industrial transformation and its change over time.

Another overarching theme in the Finnish Cold War industrial history is the culture of coordinated capitalism. Historians use different concepts but generally agree that the Finnish industrial development in the twentieth century was strongly shaped by governmental coordination and close interaction between political and business elites, who were tied together by common national interests. Finland relied on cooperative strategies in order to reconcile social stability and to facilitate economic growth by state-led industrialisation policies. Contemporary actors and retrospective analysts have regarded state involvement in industrialisation as natural and necessary. A state owner was particularly beneficial in capital-intensive production due to a lack of private resources. The sense of the common good promoted a cooperative culture in which conflicts were preferred to be resolved pragmatically and without public drama. Companies engaged in official and unofficial cooperation with other companies, governmental bodies, and labour market organisations to negotiate wages and control competition.

Studies on the Finnish economic and industrial development have described the Finnish version of capitalism during the Cold War employing such concepts as ‘cooperative capitalism’ and ‘consensus capitalism’. Prominent Finnish industrial historian Markku Kuisma introduced the term ‘national capitalism’ (kansallinen kapitalismi) to emphasise the national interests which directed not only political decision-making, but also affected big private corporations. In their study on the Bank of Finland, Antti Kuusterä and Juha Tarkka denoted post-war Finland as a ‘negotiation economy’ (neuvottelulalous), in which different interest groups acquired influence on Finnish economic policy due to weak governments, and established corporatist practices. In his study of the Finnish foreign trade policy, Tapani
Paavonen describes Finnish political culture as ‘consensus politics,’ characterized by compromise and collaborative decision-making, especially in questions related to foreign trade.81

Amid the economic deregulation, globalisation, and European integration of the 1980s and 1990s, the role of the state in the Finnish economy generally decreased. Politicians and industrial interests group gradually became ready to prioritize economic competitiveness over full-employment and protected markets. As to accentuate the change, they often criticised the old consensus culture of closed decision-making outside Parliament and democratic procedures.82

These two institutional contexts, the Finnish special relationship with the Soviet Union and the Finnish version of cooperative capitalism, characterised the framework in which the Finnish Cold War shipbuilding system was established and expanded. This study contributes to these discussions by approaching the Finnish-Soviet special relationship and the Finnish cooperative culture from the point of view of the shipbuilding industry.

1.4. Analytical framework: Cold War shipbuilding as a techno-economic system

My research approach to the Finnish shipbuilding industry is strongly influenced by the fundamental idea of the social construction of technology: Technology does not develop along pre-determined trajectories, but technology gains meanings and uses and comes into being as a part of human activities.83 Technology is developed, promoted, and used in specific circumstances by human actors striving towards different goals.84 At the same time, technological artefacts, processes, and knowledge provide new possibilities and restrictions for individuals, nations, and interest groups. From my point of view, however, social groups do not have unlimited power over technological development; rather, their freedom to select the surviving design is restricted by different material, economic, and other factors.85 In myriad ways, technology shapes—and is shaped by—its material qualities and social context.

83 Here I follow Thomas Hughes's practice of using “technology” and “technological” to refer to complex heterogeneous systems and “technical” to refer to material artefacts, processes and software. Hughes, "Technological Momentum," 2009, 142.
85 Hughes criticises extreme social constructivists for being “social determinist,” which may be as ahistorical as “technological determinism” if the research lacks sensitivity to the changing relationship
In concert with the community of modern historians of technology, I understand technology as an instrument for human beings to satisfy their wants by using material means in ways that produces change in the world. As Svante Linqvist has underlined, the difference between human ‘wants’ and ‘needs’ is focal: Individuals and communities use technology not only to obtain the basic human material requirements such as nutrition and shelter but also to satisfy more complex wants for security, health, and status. Material artefacts alone do not mean or do much; artefacts become technology in human interaction. Technology consists of a multifaceted assemblage of stuff, objects, and processes. Technology is also about knowledge and practices for doing things, inventing new things, and maintaining old things.

On a larger and broader level, technology is more appropriately analysed as a ‘technological system’. An ocean-going vessel would be a complex technological system by itself, but my scholarly interest within this thesis focuses not on the floating steel constructs themselves—rather the heterogeneous network of actors, organisations, institutions, and tangible and intangible objects that were required to build them.

My prime theoretical starting point is the notion that a system of technological development alone does not constitute the necessary conditions for a viable industry. A profit-driven civilian technology industry would not exist without an economic dimension. Thus, I conceptualise the Finnish shipbuilding industry as a techno-economic system—a complex problem-solving entity consisting of heterogeneous tangible, intangible, human, and non-human components—that contributes to the development of shipbuilding in Finland, and evolves at a specific place and time through its interaction with its environment. Its main function was to build and sell ships, but it also had other political, social, and economic functions during the Cold War.

This conceptualisation draws heavily on the research tradition of Large Technological Systems. Thomas Hughes originally introduced the concept of Large Technological Systems (LTS) for studying the development of electricity networks and the rise of American technology. "Technological Momentum," 2009, 142-143.

Linqvist refers to Helmer Dahl’s delineation of technology having three basic functions in historical societies, productive, military, and symbolic that corresponds roughly with the triangle security-welfare-prestige used in this thesis. Linqvist, Technology on Trial, 1984, 14.

David Nye has argued that technology is inseparable from human evolution, see David Nye, Technology Matters: Questions to Live With (Cambridge: MIT Press, 2006), 1-15; Ruth Schwartz Cowan has introduced the “social history of technology” that emphasises the role of individuals using technology and technology changing human life conditions, see: Ruth Schwartz Cowan, A Social History of American Technology (Oxford University Press, 1997).

“Techno-economic system” has been used in slightly different definitions in other studies. Claes-Fredrik Helgesson introduced it in his study on Swedish telecommunications to emphasise the interwoven nature of technological, economic, and social elements, but his approach to techno-economic networks leans more towards the ANT tradition than to the LTS. Claes-Fredrik Helgesson, Making a natural monopoly, 1999, 34. See also: Michel Callon, “Techno-Economic Networks and Irreversibility” The Sociological Review 38:1 (1990): 132-161.
technology industry. In its original use, LTS was a conceptual approach to studying technological development and understanding how different national contexts grow different technological systems. Later on, Hughes developed the system approach in his studies on large, complex projects that were also typical for the Cold War era.89

The ‘system’ is a versatile concept, widely used by a variety of scholars to analyse industrial dynamics among a number of other things. Before the breakthrough of Hughes’s LTS, historians of technology applied general system approaches to analyse production units, infrastructure networks, or economic sectors.90 In its loosest use—for an unspecified system concept—it only provides a way to note that things are connected. This is why it is necessary to devote space to examining the concept of the techno-economic system and its application in this thesis, as well as its relationship to other similar concepts and related analytical tools.

A technological system incorporates heterogeneous components within a framework that did not need to be centrally coordinated, but that has a greater impact than the sum of its parts.91 Together with other network-oriented approaches that arose in the 1980s, such as Actor-Network-Theory (ANT), LTS has been widely influential in shaping how science and technology studies (STS) and the history of technology approach technology, as they turned the focus from single tangible objects into the relations and dynamics of complex networks.92

Social scientists criticise Hughes’ LTS concept for being vague, whereas historians celebrate its ambivalence. They argue that for historical studies, a conceptual tool that is ‘more useful than elegant’ is appropriate. LTS presents a theoretical framework of how things are connected while avoiding implying that everything is connected.93 As is invaluable for historical studies, LTS also provide tools to examine how these connections change over time.

From the point of view of this study, a clear benefit of LTS compared to more general network approaches was that it provided a conceptual tool to differentiate between internal and external factors: between the system and its environment. By definition, system components contribute to the same system goal, and are mutually interdependent in the way that changes in one component affect the others. The environment consists of factors that are not under the control of the system managers, but which depend on the system or on which the system

92 In particular, Hughes criticises engineering systems for neglecting politics and economical models for neglecting technological factors, and social scientists for such a high level of abstraction that it loses its connection with material attributes.
depends. Hence, the limits of the system’s control delimit the system itself. The sphere of control demarcates between the system and the environment. For example, Hughes counts the state regulatory authorities as system components in cases where they were under the influence of the system to a significant degree. When those authorities were independent from the system control, they belonged to the system environment, not the system.

The LTS approach fits most conveniently with the analysis of the creation, building, and stabilisation of certain locally embedded large technological systems: the kind of use for which Hughes originally created the system concept. In addition to studies of nation-wide, complex infrastructure systems, researchers have applied LTS as an analytical framework to diverse set of systems that may not be large or critical for societal structure. For instance, Lars Olsson has employed the large technological system approach to his analysis of the role of engineers in the development of shipbuilding industry in Sweden. Aaro Sahari analyses the Finnish interwar shipbuilding as a process of system building.

While building on the foundation of the LTS literature, I add alongside technology an equally strong economic dimension, and thus define my unit of analysis as a techno-economic system. The reason for this is that a good concept should be self-explanatory and focus attention towards the right questions. Even though historians of technology frequently address economic transactions within the technological system, the LTS concept set the focus on technological development, and it is not self-explanatory for those who are unfamiliar with the LTS tradition. From my point of view, the development of a technology industry such as shipbuilding is equally about technological and economic processes. A historian of industrialisation needs to take both seriously.

With the concept of the techno-economic system, I also want to emphasise the constant tension between stabilization and transformation in industrial development. Hughes dedicated his work to examining technological development that appeared as a process of technological systems becoming bigger, better, and more stable. When the system matures, he argues, it gains style and momentum. The system gathers momentum from several sources,

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95 Hughes, "Technological Momentum," 2009, 144.
such as specialised skill and knowledge, special-purpose machinery, physical structures, and organisational bureaucracies. System momentum resists changes and establishes systemic rigidities that may appear as deterministic path-dependencies. Gradually, a mature system becomes more independent from its environmental factors.

Following this research tradition, the LTS concept implies a forward-moving development towards a steady system. This juxtaposed with the business-historical understanding of industrial longevity. Corporations, if they are lucky, grow, expand, and control their supply chains to gain stability, but because their existence depends on selling goods externally, they can never be self-reliant systems independent from external jolts. Thus, business longevity is an uncertain struggle rather than an eternal opportunity to mature.

Technological systems may settle down when they mature, but techno-economic systems are constantly required to change and adapt to changes. Even though the system may gain momentum, industrial development is understood here as an act of enduring rather than maturing. The distinction is not as trivial as it may seem. It requires us to reconsider some of Hughes’s key concepts: salient, reverse salient, and critical problems.

Salients and reverse salients are analytical concepts that Hughes introduced to study an unevenly expanding technological system. A salient is ‘a pronounced projection or bulge in an advancing front; a reverse salient, an oxymoronic concept, refers to a part of a front that lags behind’. Salients and reverse salients are transformed into internal generators of system change when the system builders recognise and address them as critical problems and solve the problems by introducing new components or modifying old system components.

When LTS historians study technological development within a developing system, being ‘ahead’ or ‘behind’ is metaphorically meaningful. If, however, the development of the techno-economic system implies not a forward-moving linear progression but merely a process of continuous adaptation to cyclical fluctuation, the situation changes. The techno-economic

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99 Hughes, “Technological Momentum,” 146.
103 Hughes, “The Dynamics of Technological Change,” 1992, 100.
system needs to address critical problems which are not necessarily system internal salients or reverse salients but external jolts challenging its very existence.

I want to end this theory section by making some remarks on my theory application.

In the classical studies of Large Technological Systems, the focus is often on identifying the system builders. The system builders are typically engineers and inventors who use their creativity to find new ways to control the human-built world and to recognise and solve problems that prevent the system from approaching its goal.

The transformation of the shipbuilding industry towards the end of the Cold War, to a great extent, entailed national networks unravelling. The more the industry was exposed to global competition, the less system-builders could determine its development. Some prominent industrial managers did maintain a key role in industrial development as they interpreted external threats and reacted to them in certain ways that were not predetermined. The question is, however, what kind of a role was this: Were they actually able to build the system, or only able to adapt to external jolts?

In this case, an overly strict use of sociotechnical system theory could over-emphasise the agency of individuals and underestimate external environmental forces. While recognising certain individuals whose personality or personal ambitions made a distinctive impact on Finnish shipbuilding and trade, I am not intentionally looking for the central system builders. Rather, I focus on the more general level of system structures that frame the individual action. Instead of a specific decision and certain decision-makers, I concentrate on the trajectories that had led to the point of decision and determined the agenda and alternatives.

Similarly to other system and network theories, LTS directs attention away from specific components to the relations between them. Nevertheless, instead of complex networks of interactive links between technology and culture, this thesis focuses on the heterogeneous connections that constitute the relationship between the shipbuilding industry and the state. I categorise the main actors into three analytical groups that held different functions: the industrial agents, the state administration, and the political actors.

104 Focus on relations instead of components is shared by many system theories that differ from each other mainly in the ways that they define the system components and how they analyse the system dynamic. For instance, National Innovation System (NIS) is defined inside the borders of a national state involving “the networks of institutions in the public and private sectors whose activities and interactions initiate import, and diffuse technologies.” Christopher Freeman, Technology and Economic Performance: Lessons from Japan (London: Pinter, 1987), 1. See also: Charles Edquist, “Systems of innovation – Perspective and Challenges” in The Oxford Handbook of Innovation, eds. J. Fagerberg, D. Mowery & R. Nelson, (New York: Oxford University Press, 2005), 181-298. Historical network analysis has a similar interest in connections, mostly focussing on social networks, without assuming the network component sharing a common goal: Charles Wetherell, “Historical Social Network Analysis,” International Review of Social History 43:6 (1998): 125-144.
The core of the techno-economic system of shipbuilding comprises the shipyards and their owners. Shipyards selling, designing, and launching a new ship were responsible for technological and economic production in the most direct and tangible sense. They constitute the most visible part of the shipbuilding industry. Besides shipyards, the industry needs education and knowledge production to be able to build and develop competitive vessels; contacts and communication with customers and access to the negotiation tables; classification and insurance societies to decrease risks; financing organisations; credit and guarantee granting bodies to fuel the business and many others. In this study, the shipbuilding industry is primarily represented by company managers and shipbuilding engineers in leading positions who took an active role in shaping company strategies or interacting with the other layers of the system.

Shipbuilding is a labour-intensive industry, and the shipyard workers were often politically active and ready to use strikes to influence state politics. The political role of shipyard workers in Cold War Finland is an enormously important and equally complicated topic that labour historians and social scientists have addressed in their studies.105 However, in this study, the industrial relations lie primary outside the scope of the investigation.

Another group of actors closely related to Finnish Cold War shipbuilding consisted of state administrators. They managed the public institutions that transmitted, intermediated, and controlled orders and payments. This bureaucratic layer constituted the material, organisational, and financial infrastructure that enabled production and trade. The main actors in this layer were civil servants who negotiated, interpreted, and mediated the inputs from both industry and political leadership. Their impact was not neutral; indeed, they actively created opportunities and imposed restrictions, thus shaping the industrialisation.

Finally, the Finnish Cold War shipbuilding system comprised politicians. Presidents, ministries, party leaders, and members of parliament exercised state power and determined the legislative framework in which the civil servants and industrial actors operated. These state actors were able to dictate legislation, regulations, and a great number of public procurements, and they used that power to shape the industrial development.

1.5. Sources and their use

Source criticism

A large body of literature on Finnish-Soviet trade provides testimonies that the politically-supported, bilateral Finnish-Soviet trade system made Finnish shipbuilding during the Cold

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War predictable, profitable, and stable. The endless array of stories repeats how the prices were lucrative, the Soviet demand for ships was endless, the bilateral system secured the high-volume demand, the political support from President Kekkonen was invaluable, and vodka was abundant. The supply of technologically advanced vessels made the Finnish shipbuilding industry a critical resource for the Soviet Union, and made the Finnish shipbuilding dependent on the Soviet trade.\textsuperscript{106}

These conceptions form the core of how Finnish readers are accustomed to thinking about how the Soviet trade shaped the Finnish shipbuilding industry during the Cold War. However, much of this literature does not hold up to historical scrutiny. Despite the great interest in shipbuilding heritage, scholarly rigorous historical studies are rare. In fact, many of the Finnish shipbuilding companies have preferred a readable book instead of scientific study ‘with the dusty taste of archival records,’ as the historical review of the state-owned company Valmet stated in the late 1980s.\textsuperscript{107} Viljo Lundelin describes his book on Laivateollisuus’s shipyard history ‘not as a historical study but a historical memoir’\textsuperscript{108}. Of the Finnish shipbuilding histories, only Rauma-Repola and Hollming contracted a trained historian to conduct archival research.\textsuperscript{109} Apart from Mikko Uola’s monograph on Rauma-Repola, shipyard histories are mainly derivatives of existing literature, magazines, and oral history sources.

Corporate histories typically come into being when companies have a specific need to cherish their successful past. As the Wärtsilä Helsinki shipyard’s centenary history project in 1961 noted, ‘economic history is far from an exemplary narrative of a continuous march from a modest beginning to a place in the sun’. Company histories often fail to address all of the


failures and hardships that companies need to overcome in order to survive.\textsuperscript{110} Indeed, the only Finnish shipyard history work that challenged this heroic company narrative was banned by the corporation director and never published.\textsuperscript{111}

Academic historians never hold a monopoly over the past or on how people remember it. The various non-scholarly reviews, memoirs, and commentaries form a rich source of often very detailed information. It ‘grey literature’ should not be dismissed. Nonetheless, the source-critical challenges are considerable. Non-scholarly literature, when it is based solely on earlier non-scholarly literature and amplified by a vivid oral history tradition, rarely evaluates critically or corrects earlier studies. Instead, the texts more often form an echo chamber in which established narratives keep being repeated and becoming established.

I chose to treat the commonly shared narratives concerning the Finnish-Soviet ship trade during the Cold War as ‘myths’. Myths as they are used here are not to be understood as necessarily false but as culturally charged stories that communities tell themselves to give meanings to their past. William H. McNeill originally formulated the concept of ‘national myths’ to analyse the relationship between collective identity and collective action. Per Lundin and Niklas Stenlås have applied the concept to analyse national narratives in Sweden during the Cold War, arguing that the myths of ‘modernity’ and ‘neutrality’ were implicated in shaping large technological systems as they were widely used to justify political priorities, mobilize resources and investments.\textsuperscript{112}

Methodologically, understanding established narratives to be widely shared but rarely validated myths implies the need to systematically practice source criticism on all prior literature on the Finnish-Soviet ship trade. Instead of a solid foundation of undisputed factual knowledge on which to build the empirical analysis, they provide hypotheses that require critical evaluation.

This research does not aim to rewrite the history of shipbuilding in Finland during the Cold War by providing a new grand narrative, but to contribute to a better understanding about the limits of the existing ones. In so doing, I end up chiming in with some lines of the old narratives while refuting some other theories.

\textsuperscript{110} ”Ekonomisk historik är långt ifrån alltid den föredömliga berättelsen om idog march från en blygsam början till en plats i solen.” Sandvikens Skeppsdocka genom hundra år, ed. Christoffere Ericsson, Wärtsilä Hietalahden telakka, unpublished).
\textsuperscript{111} The director Wilhelm Wahlforss did not like the shipyard developing an independent identity separate from the Wärtsilä brand and ordered the publication to be destroyed. The next historical endeavour in Wärtsilä took place under auspices of the company centennial celebrations in 1984. Both the historical review on the company (Haavikko, Wärtsilä 1884-1984, 1984) and the bibliography of Wilhem Wahlforss (Benedict Zilliacus, Wilhelm Wahlforss: Benedict Zilliacus kertoo Wärtsilän voimamiehestä (Helsinki: Wärtsilä, 1984) reproduced a heroic narrative with Wahlforss in the leading role.
\textsuperscript{112} Lunding & Stenlås, “Technology, State and National Myths in Cold War Sweden”, 2010, 4-9.
Archival sources

The availability of new source material has driven historiographic progress in Cold War research. And yet, it is not only the declassification process that propels historical research, but also new methodological approaches and the re-evaluation of collections that are already available. In this study, I examine the Cold War through public and private documents, which both come with their own restrictions, challenges, and opportunities.

Industrial archives are seldom comprehensive, systematically organised collections readily available to satisfy the needs of historical inquiry. The main Finnish industrial archives hold the collections of the four largest shipbuilding companies in Finland. The collections of the privately-owned Wärtsilä, the state-owned Valmet, as well as their amalgamation Wärtsilä Marine (1987-1989) are all stored in the Central Archives for Finnish Business records, ELKA, located in Mikkeli. The archiving practices in both companies have been inconsistent and primarily reliant on some active individuals. For instance, while the negotiations on Wärtsilä’s Soviet trade department with the Soviets have been carefully documented and stored, the same collection has hardly any material at all concerning commercial negotiations with western or domestic customers.

The multiple mergers and amalgamations that occurred in the Finnish shipbuilding industry throughout the 1990s and early 2000s have also contributed to the fragmentation of Finnish shipbuilding archives. The majority of collections have been destroyed on purpose or by accident. An illustrative exemplar is the fact that the most comprehensive collection of the early development of the shipbuilding company Masa-yards I have been able to use, consists of one folder that one interviewee happened to find in a remote office at the shipyard.

The archives of the west coast shipbuilding operations, the Rauma-Repola and Hollming shipyards, are currently stored at the UPM central archives in Valkeakoski. Compared to the south coast shipbuilders Wärtsilä and Valmet, these archives are quite extensive.

In this study, I have chosen my case studies on the basis of availability of primary sources. Not having complete archival collections is a challenge shared by most historical projects. It is not an insurmountable problem, but it does necessitate careful consideration of whether the shortcomings of the industrial collections are systematically biased in a way that might lead to an inaccurate overemphasis on certain aspects.

Governmental organisations have systematic practices for filing documents. As a result of the strong role of the Soviet trade as a part of the Finnish foreign affairs, the main public collections related to shipbuilding exportation to the Soviet Union are located in the archive of the Ministry of Foreign Affairs in Helsinki. The Ministry of Trade and Industry, which collections are stored in the Finnish National Archive, remained secondary in shipbuilding policy until the late 1980s.

The Cold War emphasised the role of the highest level of the political hierarchy also in trade and industrial politics. The personal archives of President Kekkonen are located in Orimattila. President Koivisto’s collection was transferred to the National Archive during this project. Both collections are, to an extent not exactly known, selected and organised by the presidents themselves. Both of the presidential collections contain private correspondence and other documentations concerning shipbuilding. This indicates that the affairs of the Finnish shipbuilding industry had a more distinctive position in Finnish political considerations compared to, for instance, the textile industry, another labour-intensive branch that also depended on the Soviet trade.

The US archives complement the domestic collections by providing a western mirror on which the political and economic aspects of the Finnish shipbuilding industry can be reflected. Methodologically, in order to extract useful results from the vast collections in the US national archival system I chose to focus my examination on two key aspects. Firstly, because the Cold War presidents had a distinctive role in export promotion, I examined the declassified material from Finnish state visits to the USA in the US presidential archives. This enabled me to evaluate the relative position of shipbuilding in relation to other export branches. Secondly, I focused on Arctic maritime technology, especially icebreakers, in the US Coast Guard archival collections. Representing a narrow technological niche in which the Finnish shipbuilding industry had a relative competitive advantage, the icebreaker discussions stood out from the background noise, and functioned as a methodological lens for the American attitude towards Finland and the Finnish technology.

For research-economic reasons it was not possible for me to visit Russian archives. Instead, I chose to focus on the Finnish point of view. This put me in the same position as the historical Finnish actors, trying to interpret incomplete and sometimes conflicting information about Soviet intentions. Nevertheless, the study of the politics of the Finnish-Soviet ship trade from the perspective of Soviet archives is a natural and intriguing topic for future research.

**Statistical data**

I have combined qualitative analysis of archival documents with statistical data of industrial development. The most comprehensive data set of global shipbuilding is Lloyd’s Register for
Shipping (LRS) statistics. LRS statistics are widely used in analyses of maritime history but there are a couple of problems worth mentioning. Firstly, the statistics include merchant ships over 100 tonnes or more, with their own propulsion. Thus, they exclude barges, small tonnage, and governmental special purpose vessels, which on occasion made up a considerable proportion of the Finnish shipbuilding production.

Production volume alone is insufficient to describe, yet alone to explain, the development of the Finnish shipbuilding industry during the first half of the Cold War. In order to understand the Finnish trajectory in industrial transformation, we need both the structure and geographical distribution of the ship trade.

In order to complete the LRS statistics, I have created a separate data collection of ships built in Finland 1952–2016 based on lists collected by shipyards and shipbuilding organisations. This collection is referred in the text as ‘SM Database for Ships Built in Finland.’ The main sources for the information in this database were the archives of Meriteollisuus Ry and shipyards. No single source of information was complete; some sources included the names of the ships but not their volume, while other sources listed the ships using varying units, making comparisons difficult. Different sources referred to shipyards, ship types, and customers in an inconsistent fashion.

I have crossreferenced the list of ships using the information from shipyards and other available lists of ships built. With newer vessels, it was sometimes also possible to check information from public ship registers.

Finnish Cold War shipbuilding had three markets with distinct trade and financing practices, customers, and production structure. In order to analyse the geographical division of trade, I classified the ships in my database into three categories based on the destination. ‘Eastern trade’ consists of ships sold to European socialist countries, which barring a few exceptions primarily meant the Soviet Union. ‘Domestic trade’ refers to the ships sold to Finnish ship owners. ‘Other’ is the category for all ships sold to all the other countries. Even though Finland sold some vessels to non-European socialist countries such China, this category mainly refers to Western trade.

115 Such dead weight tonnages, gross tonnages, compensated gross tonnages. In case of icebreakers, horse powers, shaft-horse powers, and megawatts were commonly used.
117 Sosialist countries, excluding China.
118 Finnish post war ship export to China remained statistically irrelevant even though it occasionally was, as Jensen-Eriksen has presented, politically complicated. Niklas Jensen-Eriksen, "Lost at Sea:
Figure 1: Lloyd's Register for shipping data on ships launched in Finland (GT) and SM Database for Ships completed in Finland. Especially in the 1950s, the main difference is the large share of barges and government vessels that are not listed by LRS.

Figure 1 presents the difference between these two data sets. Supported by qualitative data, they provide a reasonable approximation of the trends in the Finnish shipbuilding. In 1952–1960, the exclusion of barges and governmental vessels from the LRS statistics are the two most important factors in widening the difference between the two sources. Between 1958 and 1960, the Finnish shipyards completed altogether 135 different barges, twelve research vessels and eight icebreakers. Another difference between the two data sets is that the LRS data presents the ships' launches, and the other database presents the ships completed. Several months might pass between the launch and the completion of a ship.

Both LRS statistics and my own data set measure the ships built by gross tonnage (gt). As it is widely used in maritime statistics, it was the only unit applicable for a reasonable long and comparable time-series. Gross tonnages is a measure of the internal volume instead of the value of the ship. It does not reflect the materials or machinery needed, or the man-hours required to build the ship. In particular, the use of gross tonnages to describe the

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120 Maritime historian Yrjö Kaukiainen has discussed the problems embedded in the use of gross tonnages in the studies of historical maritime activities, and has argued for the use of Deadweight tonnages (DWG) which refer to the ship's carrying capacity. Yrjö Kaukiainen, "Tons and Tonnages: Ship Measurement and Shipping Statistics, c. 1870–1980," International Journal of Maritime History, 7:1 (1995): 29-56. However, as argued above, as DWT data is seldom available, GTs remained the
development of shipbuilding biased the comparisons between the two other Nordic countries that specialised in Large and Ultra Large tankers, and Finland, who specialised in smaller, design-intensive special-purpose vessels.\textsuperscript{121} Thus, these data sets do not picture the actual workload or the future expectations at the shipyards, which were the basis for most strategic decisions concerning investments and workforce made by the shipyard managers. I have occasionally also used order book data collected by the Association of West European Shipbuilders (AWES) and published in AWES yearbooks.\textsuperscript{122}

The primary source of statistical information on Finnish shipbuilding in relation to the Finnish economy is the Central Statistical Office of Finland, and particularly the statistical yearbooks (\textit{Suomen tilastollinen vuosikirja, Suomen virallinen tilasto}, SVT). Long-term series provide insight into general trends in industrial development. However, because the industrial standards changed during the research period, it was not always possible to gather accurate and comparable data on specific issues such as shipyard employment. For example, in the early 1950s, the Central Statistical Office of Finland classified the workforces of both ship and boat building in the same category as ‘industrial and handicraft production’. As industrial scale manufacturing differs from boat building to a significant degree, this category provides only approximate information about the development of shipyard industry. From 1956 onwards, the official statistical yearbooks separated the building and repairing of steel ships into their own category (SIC, Standard Industrial Classification, SIC, 3812 and from 1973 onwards SIC 3841).

International statistics typically follow the International Standard Industrial Classification (ISIC). Finland had its own Standard Industrial Classification (Toimialaluokitus, TOL) for national uses that corresponded roughly to the ISIC from 1968 to 1988.\textsuperscript{123} After 1988, shipbuilding was no longer a category of its own in the official industrial statistics, which is why I have to rely on varying and fragmented sources in shipbuilding employment that were mainly collected by industrial interest groups during that period.


\textsuperscript{122} Association of West European shipbuilders and ship repairers, \textit{Annual reports} 1970, 1979-1996.

Contemporary literature, magazines and newspapers

Contemporary literature is a wide group of books and studies connected only by the fact that they were published before the disintegration of the Soviet Union in 1991. Although this border is artificial, it is methodologically useful to separate books written without knowing the end-result of the Soviet experiment.124

A great deal of the literature classified as contemporary consists of economic reporting and analysis of the mechanisms of the Finnish-Soviet trade. When they are descriptive rather than interpretative, many of these studies provide relatively unproblematic information on the trade system and mechanisms. Other contemporary accounts, however, are heavily corrupted by the political liturgy that was typical for Finnish-Soviet affairs. These texts are better sources on the politics and discourses of trade than the trade itself.125

Professional magazines communicated latest achievements, interesting topics, and imminent challenges for the professional audience. I browsed the issues of the Finnish maritime monthly Navigator from between 1955 and 1990, and used them to test my archival sources for shortages and to identify topics of considerable importance as perceived by the Cold War actors. While not usually suitable for use as a primary source about the significance of certain factual aspects, Navigator provided a relatively inclusive cross-section of the topical issues in the Finnish shipbuilding industry as well as insight into the industrial points of view.

Domestic and foreign newspapers provide some indication of the attitudes towards Finnish shipbuilding. Public opinion was a frequently-used tool to influence shipbuilding policy-making. Both the shipyards and the government were well aware of this. I have used newspaper articles as a source about what information was publicly available, who was able to represent the state or the industry, and what the messages were that the interviewees wanted to share.

When discussing source criticism and Finnish-Soviet Cold War affairs together, Finlandisation is —also here— an unavoidable topic. As previously noted, besides the analytical meaning of the asymmetric power relationship, the concept of Finlandisation refers to biased communication about Soviet-related issues. In 1977, Walter Laquer published an article on Soviet influence in Finland’s internal affairs, stating that the Finns went beyond the necessary minimum in order to retain Soviet confidence:

124 This is also the main reason for me to include the year of publication in the short footnotes as a contrast to the standard international convention in the field.
According to Kekkonen’s line, it was also imperative that Finnish political leaders, parties, the media, and individual citizens all behave “responsibly”; otherwise they will endanger the very survival of the country. To act “responsibly” means to refrain from doing anything the Russians may not like, and this involves not only self-censorship but also the need to anticipate Soviet wishes, and even a willingness to accept a Soviet veto if self-censorship breaks down.126

In short, Finlandisation in Cold War publications appears as a systematic practice to avoid topics that could irritate the Soviet Union, and to deliberately sugar-coat articles on the Soviet Union for opportunistic reasons.127 A watershed in the Finnish Finlandisation discussion was Timo Vihavainen’s book ‘Kansakunta rähmällään’128 (1991) that strongly criticised the Finnish public culture, especially during the 1970s, and made the phenomenon a conversation topic.129

The lack of reliable information on the Soviet Union was a less malign, yet equally misleading, problem. Even though the politicians, shipbuilders, and journalists who specialised in Soviet affairs frequently crossed the borders to the socialist bloc and sometimes created close personal connections with the Soviets, their expertise was often based on personal experience and not on systematic research.130 It is important to make difference between primary and secondary sources and literature for this reason as well.

Memories and oral history

In addition to archival sources and research literature, I have used a vast array of non-scholarly publications and oral history interviews.

I have conducted fourteen semi-structured interviews with contemporary actors. I recorded all the interviews and transcribed most of them myself. For the two cases in which I did not personally make the transliteration, I have checked the text with the recordings.

Because many of the central actors in the Finnish-Soviet trade had been already interviewed as a part of different projects, I did not aim to interview all relevant actors but selected

128 Roughly meaning “The nation on its knees” but with a Finnish word that bears more pejorative connotations.
130 While Finland willingly presented itself as a Russia-expert in Europe, the actual level of the Soviet expertise in Finland during the Cold War has been questioned as a part of the Finlandisation debate. Vihavainen, Kansakunta rähmällään, 1991, 150-154; Kari Holopainen, Orpo piru. Muistumia neuvostokaupasta ja vähän muustakin (Helsinki: Opus Liberum, Helsinki 2007), 254–257.
interviewees to represent different periods and professions. The oldest interviewees had a career spanning over four decades in shipbuilding, starting in the 1950s and 1960s.

In the hierarchical Soviet trade in particular, there was a distinct generational and social difference between top-level old tycoons and typically younger middle management, engineers, and civil servants. This Eastern trade ‘Junior League’ (nappulaliiga), as they sometimes called themselves, was perhaps less often involved in the state-level affairs, but managed most of the everyday affairs, for example conducting preparatory negotiations.

The oral history sources and memoirs have three functions in the study. I use them to clarify technical details and to construct a coherent timeline in the fragmented archival sources. Memoirs which are based on private archives provide invaluable assistance in organising the range of events in time and place.\textsuperscript{131} As no comprehensive archival collection exists, I chose to use memoirs and oral history sources cautiously to complement primary sources when necessary and when supported by other sources.

I also use oral history and memories to test the representative nature of the archival collections: Are there topics that are not visible in archival documents but repeated in oral history sources? What were the topics that the actors themselves found important? For example, several interviewees kept mentioning a rather trivial cost-guarantee system (K-takuujärjestelmä), a kind of a state-financing system to compensate for an increase in production prices. While the topic was not emphasised in shipyard collections, armed with the awareness of what to look for, I was able to find relevant folders in other governmental archives and the collections of industrial organisations.

Furthermore, I use the range of memoirs, biographies, and oral history sources to create a consistent picture of how the Cold War actors understood and communicated the state-industry relationship and the Finnish-Soviet trade in retrospect. In this sense, I was also able to use material from two extensive set of interviews of central actors of the Finnish-Soviet trade from an extensive oral history projects as well as to participate in a series of oral history seminars of Finnish foreign trade policy at the end of the Cold War.\textsuperscript{132} For not to compromise the integrity of those interviewees I have not interviewed by myself for this specific research project, I chose not to refer to them in the text. However, they helped me to evaluate the


\textsuperscript{132} Oral History Collection of Clearing trade, Collected in a research project at Helsinki School of Business. 2001-2004, stored at National Archive. This collection contains 49 transcribed interviews of industrial, administrative and political actors of the Finnish-Soviet clearing trade; Oral history seminars for actors of the Finnish Cold War foreign affairs at 1989-1991, organized by REIMAG project, 2015, 2016, 2017. The author participated in two seminars and had access to the notes, transcribed discussions and recordings.
representativeness of my analysis I made based on the other interviews and memoirs in a larger perspective.

1.6. Methods and the structure of the study

This last section of the introduction chapter describes how I have conducted the research and presents the structure of the study that reflects the methodological choices. At the beginning of the project, my research interests concentrated on the radical structural changes in Finnish shipbuilding industry at the end of the Soviet trade. It appeared to me early in the research process that the liquidity crisis of the largest Finnish shipbuilding company only manifested the strong, long-term undercurrents that were steadily eroding the politico-economic foundation of the industry.

This had two fundamental corollaries to the research setting. Firstly, to explain the downfall of Wärtsilä Marine, the object of my study could not be the bankruptcy per se but the complex intermingling that had conjoined the Finnish Cold War politics and industrialisation. The changes in the structure, practices, and political meaning of the shipbuilding industry were interwoven together with so many broader political, economic, and social processes that the down-scaling revealed itself as a systemic disintegration instead of merely an industrial reorganization: something came to an end while shipbuilding in Finland continued. To understand this multifaceted disintegration, I chose to examine it from five different perspectives instead of creating one coherent, chronologically proceeding narrative.

Secondly, to make sense of the end of the Cold War shipbuilding system in its historical context, I needed to know what was the system that disintegrated and from where and when the systemic disintegration originated. Although the radical changes became obvious only in the late 1980s, all of the central change processes had arisen at least in the 1970s. To separate the system building and system disintegration analytically, the structure of the following study is twofold. The first part of the study, Chapter 2, describes the building of the Finnish Cold War shipbuilding system. As the section argues, the system reached maturity in the mid-1970s. This part forms the background for the second part.

The second part of the thesis consist of five chapters, which each scrutinize the system disintegration from different perspectives. Each approaches and illuminates the Finnish Cold War shipbuilding from a different angle: the technopolitics of shipbuilding in foreign relations, scientific-technical and industrial cooperation, institutions of the Finnish-Soviet trade, industrial reorganisation, and state aid and financing. Single-focus studies in themselves produce partial understanding, but together they enlighten the transformation of the techno-economic system.
It is typical for studies stemming from the tradition of social construction of technology to include more rather than fewer aspects in analysis. Whereas students from business and economic history commonly seek order by concentrating on isolated factors, historians of technology endeavour to embrace the messy complexity of historical processes. While I describe these approaches as ‘cases,’ my research method follows more the tradition of historical narrative than any strictly specified case-study method that typically use well-defined cases as empirical test-beds to test, to build, or to expand a theory using multiple sources. In this thesis, a case refers merely to a certain approach. Several focused studies with a limited number of key elements enabled me to analyse the influence and role of certain factors with depth and nuances. In addition, separate cases provided a way to create coherent narratives without comprehensive archival collections.

Compared with a traditional, chronologically-structured narrative, the case study structure makes the analysis of long developmental processes, which were interrelated but not synchronised, easier to follow. The five cases overlap chronologically because the phenomena they describe overlap. Not everything became important at the same time. Some features, like the clearing trade, already started to play a role in the post-war years. As a contrast, Western subsidised competition became salient at a later date and appeared on the political agenda only in the 1980s.

The 1970s as a watershed in the Finnish Cold War shipbuilding system stems from the empirical research. However, the nature of the decade as a turning point within the scope of this study is compatible with the broader historiographic picture. The post-war decades up to the 1970s oil-crisis were a period of rapid industrialisation and economic prosperity, at least in Europe and the USA. Eric Hobsbawm labels the period from 1956 to 1975 as a ‘Golden Age’. The 1970s also witnessed the ultimate turning point in the global shipbuilding from the tanker boom to the post-oil crisis shipyard crisis. Cold War historians sometimes distinguish between the ‘first’ and the ‘second’ Cold War, dating the new beginning to the deterioration of the US-Soviet relationship in 1979 as a result of the war in Afghanistan and the strict foreign policy doctrines of Ronald Reagan’s presidency (1981-1989). President

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133 In the disciplines other than history, case study method typically refers to restricted study of a phenomenon in a social context, using multiple sources and without a priori theoretical notions. See: Bill Gillham, Case Study Research Methods (London: Bloomsbury Publishing PLC, 2000), 1-2.


Kekkonen’s autocratic leadership in Finnish-Soviet relations rose towards its zenith, as did the Finnish policy of neutrality as bridge-building between East and West and the deepest moments of politically compromising culture with regards to the Soviet Union.136 In the 1970s, the Finnish version of corporatist and cooperative economic policy-making and collective bargaining was established, but as several scholars have pointed out, employers’ power over employees started to grow at the turn of the 1980s.137

Chronologically, the time limit of the study does not strictly coincide with the periodisation of political history. The birth and demise of the Cold War shipbuilding system were gradual processes instead of isolated incidents. As a result, the EU membership in 1995 that formally marked the end of Finland’s Cold War position in the zone of neutrality is a more appropriate end-point for the research project than the fall of the Berlin wall in November 1989 or the dissolution of the Soviet Union in December 1991.

At the very end of the Cold War, the collapse of the Soviet Union overshadowed other aspects in recollections. The shock waves that the unexpected fall of the superpower sent through Finland were enormous, and contemporary actors often used them to causally explain the concurrent damages in Finnish shipbuilding. As I extend the timeframe to include years after the end of the Soviet trade had already collapsed, I have space to stand back and evaluate the transformation processes in their longer historical context.

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136 President Kekkonen was in office 1956-1982. In 1974, his presidency was extended without elections by an emergency law that was justified by the concurrent negotiations on nationally crucial free-trade agreement with EEC and preparations for the Conference on Security and Co-operation in Europe (CSCE) held in Helsinki 1975. On Finnish-Soviet affairs in the 1970s, see: Kimmo Rentola, Vallankumouksen Aave: Vasemmisto, Beljakov Ja Kekkonen 1970 (Helsinki: Otava, 2005).

Figure 2: Structure of the study on chronological timeline. The graph on the background presents the volume of shipbuilding in Finland (GT).

The first case study in Chapter 3 studies technopolitics of shipbuilding in state-level affairs. It illuminates techno-political processes and practices in Finnish Cold War shipbuilding in terms of international relations, and discusses the role of personal connections between the state and industry. The empirical research focuses on certain exceptional shipbuilding projects that occasionally gave a material form to a diverse set of diplomatic makeovers. In particular, these ‘flashy flagships’ of technopolitics, icebreakers and submersibles provided an opportunity to analyse the use of technology in addressing concerns over national security and national prestige. This first case examines the highest level of political hierarchy and its interaction with industry-level technical development.

The second case study laid out in Chapter 4 is about the aspects of Finnish-Soviet cooperation in shipbuilding that went beyond conventional commercial exchange. Through an analysis of motives and outcomes of East-West scientific, technical, and industrial cooperation, this chapter discusses technological development as a transnational project. While the institutions of bilateral cooperation in terms of science, technology, and industry were established as state-level political instruments, the non-state actors in industry and universities were essential in realising the actual cooperation. This second case concentrates on the interplay between state politics and the shipbuilding industry. It examines how industrial actors repurposed the

138 Garbrielle Hecht & Edwards, The technopolitics of Cold War, 4.
institutional framework decreed by the Soviet Union and used it to enact their own strategic R&D goals.

The third case study in Chapter 5 investigates the techno-economic system from the point of view of the Finnish-Soviet bilateral trade and payments institutions. It illuminates the technopolitics of the distinct trade infrastructure, and studies how the bilateral Finnish-Soviet trade became the most notable structural curiosity that characterised Finnish Cold War shipbuilding. It also examines how this bilateral trade system was dismantled. This third case focuses on the role and function of the allegedly apolitical trade administration in relation to industrial transformation.

The fourth case study examines the reorganisation of the shipbuilding industry, during which the Finnish Cold War shipbuilding operations were dramatically down-scaled, the companies were restructured, and parts of them were sold abroad. It discusses internal and external change processes that shaped the horizon of expectations of the shipbuilding system and generated the necessity for change. In particular, the Chapter 6 analyses the changes in cooperative and consensus culture between the industrial companies and between the state and the industry in the time of economic turbulence.

The fifth case approaches the techno-economic shipbuilding system from the point of view of state aid and financing. This is done through a study of state interventions in the period that was generally characterised by increasing economic liberalisation and European integration. In the way that it elaborates on the politics of shipbuilding financing institutions in domestic and western ship trade, it is a parallel to Chapter 6. However, the Chapter 7 opens up very different technopolitical questions on the role of shipbuilding in Finland’s international relations. It concentrates on the state-level decision-making about Finnish western trade and industrial policy that eventually re-defined the Finnish post-Cold War shipbuilding policy.

After the five empirical chapters, a concluding chapter summarizes the study’s main empirical and conceptual results and contributions to the research field. It also outlines the answer to the overarching research questions.
2. The construction of the Cold War shipbuilding system, 1951–1975

Between the post-war reconstruction and the first oil crisis, Finnish shipbuilding underwent a sea change from a small-scale domestic producer into an internationally notable shipbuilder in terms of volume and technical specialisation. The techno-economic Cold War shipbuilding system gained a form, constructed system components, created connections and meanings, and adopted a certain style. This chapter examines the construction of the Finnish Cold War shipbuilding system from 1951 to 1975 from three perspectives: state, industry, and institutions.

The chapter starts with a macro level examination of the role of shipbuilding as a part of Finnish foreign affairs and domestic trade and industrial policy. Besides the macro-economic background and the main decisions that outlined the Finnish Cold War shipbuilding policy, this section also discusses the technopolitical role that Finnish shipbuilding played in state politics. It shows that foreign and domestic affairs became intermingled, and that the technopolitical role of the Finnish Cold War shipbuilding system comprised elements of national security, national welfare, and national prestige.

The second section focusses on the industrial level transformations. The expansion of shipbuilding in Finland, like anywhere else, required an increasing demand and secure supply of materials, workforce, and financing. In this sense, the everyday technical and business operations in Finland’s profit-driven shipbuilding did not significantly differ from other Western European countries. However, as this chapter demonstrates, in the Cold War context the Finnish shipbuilding companies and state actors were faced with a set of restrictions and opportunities that were specific to the Finnish situation. Finnish consensus culture also shaped the competition and cooperation between the companies and their practices that resulted in a partial control of the shipbuilding market.

The third section scrutinises the central institutions of the Finnish Cold War shipbuilding system. The section addresses first the institutions of the Finnish-Soviet bilateral trade. Among the other things, these mechanisms transmitted payments, orders, and technical knowledge between ship builders and ship buyers. While the role of scientific and technical cooperation in shipbuilding remained minor before the 1970s, the institutions and administration of bilateral Finnish-Soviet trade were not merely technical details but contributed significantly to the expansion, specialisation, and profitability of the Finnish Cold War shipbuilding. The last part of this section discusses the institutions of the Finnish ship
financing and state aid in the domestic and western trade. As a whole, the section argues that the institutions of economic exchange and technical cooperation set the Finnish Cold War techno-economic system on a course that separated eastern trade from domestic trade and western export trade.

The chapter concludes with a discussion of the distinctive Finnish Cold War shipbuilding system, which reached a stable stage before the mid-1970s. At that point, the system appeared to be stable and continuous; it enjoyed unquestioned political support and generated considerable profit. The shipbuilding system had also developed a recognisable national style when solving critical problems. The style relied on personal relations among the system actors and between the state and the industry, as well as cooperative competition and bilateral Finnish-Soviet institutions.

2.1. Finnish state and shipbuilding

From the 1870s to the 1990s, the Finnish economy underwent a complete transformation from a backward and poor agrarian country into a modern industrial country. The rate at which Finland caught up with western Europe was particularly high from the post-war years to the 1970s oil crisis. Figure 3 shows how industrial production surpassed agricultural production in the post-war years, and held its share of the Finnish GDP steadily between 30% and 40%.139 This broad picture of industrialisation was the context for the formation of the Finnish Cold War shipbuilding.

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139 Hjerpe & Jalava, "Economic growth and structural change: A century and a half of catching up", 2006, 33-64.
At the beginning of independence in 1917, Finland was essentially an agricultural country, where the primary sector (raw materials, agriculture) contributed more over half of the GDP. Immediately after the Second World War, Finland experienced a hike in the secondary sector (manufacturing and industry). However, the tertiary sector (services) soon surpassed industry as the biggest sector and continued its growth at the cost of agriculture. Data: Official Statistics Finland, Suomen Virallinen tilasto (SVT).

The expansion of industrial production mainly took place in private companies, through investment decisions made by company directors based on economic and strategic considerations. Industrialisation as a national structural change, on the other hand, was a national project on which Finland’s future as a modern and independent state depended. In the aftermath of the war in January 1945, J.K Paasikivi, then Prime Minister, commented on Finnish national priorities in his diary by underlining that ‘[w]e undoubtedly need more, and many more fields, but no more agrarian workers. We need industry and industrial workers more’.140

This paradigmatic shift in the economy structure from the primary to the secondary sectors, and eventually tertiary sectors, was an effect of economic development rather than its cause.141 However, industrialisation was an imperative in Finnish post-war industrial policy because the countryside could no longer offer a livelihood to growing population.142

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142 “Lähtökohdaksi kaikissa teollisuuden kehittämistä koskevissa ehdotuksissa voidaan ottaa toteamus, että teollistumisprosessista riippuu ratkaisevalla osalla maamme taloudellinen ja myös yhteiskunnallinen kehitys ja että uusia työllisuuksia ja että uusia työllisuuksia yhä lisääntyvälle väestölle on lähinnä löydettävissä teollisuuden piirissä.” Teollisuusneuvottelukunnan mietintö
government appointed the Industrial Advisory Board in 1955 to examine the state-of-the-art and future potential of the Finnish industrial development, and to outline the industrial policy for post-reconstruction Finland. The board was manned mainly by state actors; the chairman was the director of the Ministry of Trade and Industry Department of Industry, and the vice-chair was Bank of Finland director and Professor Emeritus in economics, Klaus Waris. The committee report noted that the state should not only aim to employ the growing population, but ‘the aim has to be to create such occupations in which the productivity of labour is so high that it will provide a sufficient income and living standard’. A considerable share of these new jobs were to be found in industrial production.

Figure 4: Industrial employment in different industrial sectors 1954-1975. The metal industry was the biggest employer that provided an occupation for approximately 30% of industrial workers during the period in question. The forestry industry, which was the single most important economic pillar of the Finnish economy and exports, employed less, approximately 20% of the industrial workforce. Paper machine production, which was closely related to the forestry cluster, comprised a part of the metal industry in the statistics. Data: Annual books of the Federation of Metal Industries, Metalliteollisuuden vuosikirjat.

Another important structural change in post-war Finland was that the metal sector became the second main pillar of the Finnish foreign trade, alongside the traditional forestry industry.

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143 When the advisory board was founded in 1955, Klaus Waris (1914-1994) was a board member of the Bank of Finland. He was appointed as the director of the central bank in 1957.

144 "Ei ole pyrittävä vain hankkimaan työkykyiseen ikään ehtineille riittävästi työpaikkoja, vaan tavoitteeksi on asetettava sellaisen työpaikkojen luominen, joissa työntekijän tuottavuus on siksi suuri, että se takaa hänelle riittävän ansion ja elintason". Industrial Advisory Board committee report 1959, 13.
The export of paper and pulp long remained the most valuable export branch, but the metal industry sector increased its domestic importance as a big employer. Whereas the automatization of the forestry industry was about to decrease the labour input, the modern metal engineering industry was still a labour-intensive production. Compared to the large paper and pulp factories that had to be located near the raw material sources, metal manufacturing was concentrated in the densely populated areas of southern Finland and required less electricity. The recently-founded large shipyards on the south and south-west coasts of Finland were prime examples of this kind of nationally beneficial industrialisation.

Figure 5: The Finnish industrial gross production (million FIM) in different industrial sectors 1954-1975. The relative changes between sectors during the period were modest. At the beginning in 1954, the biggest sector was the forestry industry that produced approximately a quarter of the total while metal was the second biggest, producing one fifth. During this period, the metal sector production grew slightly faster and in 1975, metal and forestry were broadly equivalent in terms of production. Data: Annual books of Finnish metal manufacturing industries, Metalliteollisuuden vuosikirjat.

The majority of industrial companies were private, but the Finnish state also had a role in industrialisation through strategic state-owned companies and regulated financial markets. The Industrial Advisory Board concluded in 1959 that in business ‘the resolution should usually be made by company managers [without state intervention]. However, there are certain occasions when we have to allow a decisive role to general factors and the Finnish economy beyond the commercial points of view’. The committee report avoided explicit

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145 Industrial Advisory Board committee report 1959, 67-68.
146 "Ratkaisun on yleensä jätävä yrityksen vastuunalaisten johdon suoritettavaksi. Kuitenkin on erääitä tapauksia, joiloin liiketaloudellisten näkökohtien ohella on annettava yleisille ja kansantaloudellisille
discussion on the Finnish-Soviet trade but referred to the general rationale for advocating state control. In the Finnish Cold War vocabulary, unspecified ‘general reasons’ typically meant the Soviet Union.

The Soviet Union loomed large over Finland after the Second World War. It shadowed Finland’s foreign affairs and framed the decisions over Finnish economic integration with the western world. Juhana Aunesluoma has described Finnish trade policy-making during the Cold War as a continuous task of ‘interpreting and exploring where exactly the borders of economic necessities and diplomatic possibilities were located’. Finland’s navigation of the uncharted waters of the zone of neutrality was particularly risky in the early Cold War, when the Finns were still unfamiliar with the Soviet policy towards Finland.

The bilateral trade with the Soviet Union constituted a sensitive topic with a high priority in the Finnish Cold War international relations. However, it is worthwhile to put the Finnish trade with the Soviet Union in perspective. During the first part of the Cold War, the Soviet Union had a 15% to 20% share of the Finnish foreign trade. One fifth is not an insignificant share; it made the Soviet Union one of Finland’s biggest trading partners. It is still far from meaning a majority. As the figures below illustrate, the vast majority of the Finnish foreign trade was conducted with Western countries, especially the UK, Sweden, and West Germany. It was not the trade with the Soviet Union itself that made the Finnish shipbuilding an potential instrument in Cold War diplomacy, but the structure of the trade and the technopolitical connotations embedded in the trade.
Figure 6: Finnish export and import trade with the Soviet Union, the UK, Sweden, and West Germany. The Soviet share of the Finnish total foreign trade rarely rose over 20%. However, its importance for certain industrial sectors and political connections made it highly influential in the Finnish Cold War foreign trade. Imports by countries of origin, exports by countries of destination, shares of total imports and exports. Data: Finnish Custom.
The Soviet Union established economic relations with Finland immediately after the armistice in the fall of 1944. In 1947, Finland and the Soviet Union signed a Treaty of Commerce in which the countries granted each other the status of ‘most favoured nation’ (MFN) in foreign trade.\textsuperscript{149} The MFN statues alone created a distinctive position for Finland in terms of the Soviet foreign trade. Throughout the Cold War, however, a more frequently-cited foundation for the Finnish-Soviet trade relationship was the security pact—the Agreement of Friendship, Cooperation, and Mutual Assistance (FCMA), which Finland and the Soviet Union signed the following year 1948. Alongside the military implications of the FCMA treaty, the contracting parties pledged their support for ‘developing and strengthening cooperation and friendship in the Finnish-Soviet economic and cultural relationship’\textsuperscript{150}

National security was the first priority for the Soviet Union in its approach to Finland after the Second World War. Stalin needed a friendly government in Helsinki to secure a safety zone between Leningrad and Berlin.\textsuperscript{151} Yet, after obtaining the minimum objective—Finland’s loyalty in military terms—the Soviet leaders showed flexibility in their policy towards Finland. Crucially, the Soviet Union did not demand a socialist government or the dismantling of western economic connections as preconditions for Finland’s territorial sovereignty. The security of Finland was more important than state Communism in Finland. The Finnish Communists failed to seize power by themselves and Moscow did not care to help them.\textsuperscript{152}

If national security came first, national welfare and prestige were never unimportant. Friendly relations with a capitalist but loyal Finland provided opportunities to address these concerns alongside the other interests. This asymmetric power relation in the peculiar state of non-war—but with constant awareness of a superpower’s military arsenal next door—established the overall framework in which the Finnish Cold War shipbuilding system acquired meanings and functions in Finnish-Soviet relations.

The Soviet Union did not, in purely technical terms, need Finnish ships, but it did need ships. After the war, it was in dire need for all kinds of tonnage, and the other socialist countries were still unable to satisfy its needs. The Finnish shipyards were perhaps neither the best shipbuilders, nor the most economically or technically most advanced, but as the Cold War

\textsuperscript{149} Hjerpe, “Finland's foreign trade and trade policy in the 20th century”, 1993 69.

\textsuperscript{150} “Korkeat Sopimuspuolet vakuuttavat päättäneensä toimia yhteistyön ja ystävyyden hengessä Suomen ja Neuvostoliiton taloudellisten ja kulttuurisuhdeiden jatkuvaksi kehittämiseksi ja lujittamiseksi.” The FCMA treaty, (Sopimus ystävyydestä, yhteistoiminnasta ja keskinäisestä avunannosta Suomen Tasavallan ja Sosialististen Neuvostotasavaltaan Liiton välillä) SopS 17/1948


polarized the East-West trade, they became the best technical and political compromise available for the Soviet Union.

The Finnish government needed to affirm to the Soviet leaders that Finland was committed to the FCMA treaty. The shipyard managers who had invested in new production facilities, needed security that they would find orders after the reparation.

The first post-war president, Juho Kusti Paasikivi (in office 1946-1956) saw commercial exchange with the Soviet Union as a source of positive interaction between the two countries. However, he advised against increasing the Soviet share of the Finnish foreign trade over 20% to prevent the Soviet Union from using Finnish dependency on the Soviet market as an instrument in economic warfare.153 In January 1953, President Paasikivi recorded in his diary that he had heard the Soviet diplomat Viktor Lebedev saying to the Minister Törngren: ‘trade politics is a part of regular politics. If it goes well, it shows that the Finnish-Soviet relations are as they should be.’154

His successor, Urho Kekkonen (in office 1956–1982) of the Agrarian League Party, occupied a central role in Finnish-Soviet affairs even before his terms in office, when he served in government. The bilateral trade with the Soviet Union became a political instrument used both by Kekkonen and the Soviet leadership—the former to strengthen his hold within the Finnish political system, and the latter to achieve their political goals in Finland.

The hierarchical centralised coordination of the Soviet economy, made high-up political connections valuable for Finnish companies when they tried to sell their products. Kekkonen provided a channel for the company directors to deliver their message directly to the Kremlin. In Finland, the role of the president also became central because the governments were often short-lived. The Parliament of Finland, constitutionally the supreme legislative body and supervisor of the government, remained on the side-lines of Soviet trade politics, merely sealing the government’s or president’s decisions instead of critically questioning them.155

Kekkonen’s position in Finnish domestic politics was still on an insecure foundation in the 1950s and early 1960s, and the Finnish business elite in particular sometimes considered his attempt to concentrate power and monopolize the Soviet relations to be undesirable. The value of good relations with President Kekkonen in Finnish-Soviet trade was emphasised as his term proceeded. In the late 1960s, Kekkonen had already established his position as the paramount

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gatekeeper, guarantor, and mediator in Finnish-Soviet affairs—both political and economic.

The Soviet Union displayed readiness to use trade as a tool of economic warfare during a couple of diplomatic crises during the first part of the Cold War. The ‘Night Frost Crisis’ in 1958 was a Soviet protest against the particular formation of a Finnish government. The ‘Note Crisis’ in 1961 sparked off when the Soviet Union proposed to Finland military consultations by formally invoking the threat of West Germany. These crises strengthened Kekkonen’s central role in the Finnish-Soviet relations, indicated to the world the Soviet influence over Finland, and demonstrated to the Finnish industry that trade negotiations were the first thing the Soviets would cut off to show their dissatisfaction. Nobody could possibly know how far the Soviet Union might take economic warfare. It was certain, though, that increasing economic cooperation reflected a good political relationship whereas outstanding disputes hampered the developing industry and industrial workers.

The Finnish-Soviet trade exchange evolved into an indicator of the Finnish-Soviet political relationship. The valuable ship orders became tangible symbols and demonstrations of the friendship between countries. It is not uncommon in foreign relations that rhetoric precedes reality. There are often a diplomatic necessity to acknowledge mutual benefits before the actual benefits materialise. In the Finnish-Soviet relations, the rhetoric and reality of economic cooperation were co-created.

Long-term and close personal connections within the relatively small elite of leading Finnish politicians, high-ranking civil servants in the key ministries, and industrial tycoons facilitated informal communications and consensus-oriented practices in Finnish-Soviet economic cooperation. On the Soviet side, the highest foreign trade officials held their posts for over

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156 During the first part of the Cold War, the Finnish shipbuilding directors successfully invoked Kekkonen in a couple of cases in which his involvement was presumably able to create the political impetus to break through some bureaucratic red tape. This is admirably documented in both contemporary and retrospective literature, including: Seppo Keränen, *Moskovan tieillä: Urho Kekkonen ja Neuvostoliitto 1945-1980* (Helsinki: Otava, 1990); Esa Seppänen, *Idänkaupan isäntä* (Helsinki-kirjat, 2011); Jyrki koulumies, *Kohtalona Kostamus. Risto Kangas-Ikkalan muistelmat.* (Helsinki: Siltala, 2012), 56. Kekkonen’s active involvement in the hip trade during the first part of the Cold War is also supported by his correspondence with industrial leaders. For instance: T. Horn to U. Kekkonen 23.2.1970, *Vierailut Neuvostoliittoon 1968-71* 22/11, UKA. The main problem with the existing literature is not that it misrepresents the President’s role in certain business deals, but that it exaggerates his influence in a fashion that overshadows everything else.


several decades. Soviet memoirs refer to an informal ‘Finnish Club in Moscow’ consisting of Soviet leaders who cooperated with Finns, and tended to see the bilateral economic cooperation in a positive light, providing strong support for new cooperation projects.\(^{159}\)

The Finnish shipbuilding industry was well represented in the well-networked Finnish technocratic elite that most frequently participated in the state-level negotiations on economic cooperation with the Soviet Union. When political scientist Ari Salminen studied the Finnish-Soviet trade administration, he pointed out a cluster of four ‘super-directors’ who possessed several chairs in directorates of big corporations as well as number of central posts in significant cooperative organisations. In 1976, two of the four super-directors were directors of shipbuilding companies with good connections to foreign trade administration. Tankmar Horn, the director of Wärtsilä, had been recruited from the foreign trade department of the Ministry of the Foreign affairs. Olavi Mattila, Kekkonen’s old associate from his youthful career as a national level athlete, had held several ministerial positions before being appointed the director of Valmet in 1965. The other two superdirectors were Helge Haavisto, the director of Rautaruukki which delivered steel plates for most of Finnish ships and the director of the Bank of Finland, and Soviet confidant Ahti Karjalainen.\(^{160}\)

By the 1970s, the Finnish shipbuilding industry was so closely interwoven with Finland’s national security and national prestige that taking it into account at state-level diplomatic negotiations was no longer just about advocating for private business but about advocating for Finland. From the point of view of foreign affairs, the border between the techno-economic shipbuilding system and the state was unclear: Blurred political and economic interests, close personal connections, and combined public and private decision-making made the separation of legislature, executive, and judiciary powers fuzzy, virtually impossible, and seemingly undesirable.

This widespread convergence between private and public interests remarkably resembled some accounts of military-industrial complexes. Over decades of close cooperation, participants adopted coincident values and perceptions to such an extent that coercive manipulation and active lobbying became unnecessary; everyone was already convinced that they were acting in the public interests rather than their own.\(^{161}\)


2.2. Shipbuilding: Production and industry

Expansion and establishment of the shipbuilding system

Finnish shipbuilding had long traditions dating back to the era of wooden hulls and sails. The craft-based shops constructed vessels for coastal traffic in the waters of the Gulfs of Finland and Bothnia as well as for long-distance shipping. Finnish international shipping with wooden sailing ships reached its final peak after the mid-eighteenth century. In Turku, steamship building and related machine shops developed into a full-fledged though modestly-sized industry during the nineteenth century, fuelled by western technology transfer and Russian orders.\(^\text{162}\) At that time, Finland was a part of the Russian Empire as an autonomous Grand Duchy (1809–1917), and the business benefitted from the supply of abundant raw materials, cheap labour, and favourable trade policy reforms.\(^\text{163}\) After 1875, the development of Finnish merchant tonnage lagged behind international development due to competition, a persistent decline in freight rates, and the failure to switch from sails to steam.\(^\text{164}\)

From the nineteenth century to Finland’s independence in 1917, Finnish steel ship production operated in two markets: domestic markets and the quasi-domestic Russian market. Even though there was a customs border between Russia and the Grand Duchy of Finland, the trade with the Russian Navy was crucial for some shipyards.\(^\text{165}\) Among them were Hietalahti shipyard\(^\text{166}\), a relatively modern dry-dock in Helsinki founded in 1865, and two shipbuilding


\(^{164}\) The paradigmatic shift from sails to steam in shipbuilding is one of the most thoroughly examined topics in maritime history. The shift was inevitable, but the diffusion of the new technology took place over a long period of time with great national differences. See: Yrjö Kaukiainen, The history of Finnish shipping (London: Routledge, 1993), 77-85, 97-110; Yrjö Kaukiainen, “The transition from sail to steam in Finnish shipping, 1850–1914”, Scandinavian Economic History Review, 28:2, (1980) 161-184; Yrjö Kaukiainen, “Coal and canvas: Aspects of the competition between steam and sail, c. 1870-1914” in Sail and Steam, selected maritime writings of Yrjö Kaukiainen, eds. Lars U. Scholl and Merja-Liisa Hinkkanen, Research in Maritime History 27 (St. John’s: International Maritime Economic History Association, 2004).

\(^{165}\) During the period of autonomy 1809-1917, Russia became an important trading partner, Sweden remained as an important economic connection and the shares of the British and German markets started to rise at the turn of the century. Riitta Hjerppe, “Finland’s foreign trade and trade policy in the 20th century”, Scandinavian Journal of History, 18:1 (1993) 18-19.

\(^{166}\) The shipyard had several names including: Hietalaiden laivatelakka, Sandvikens Skeppsdocka. Later it became Wärtsilä Helsinki shipyard. In 2018, it is known as the Arctec Helsinki shipyard. In this thesis, when referring to the events after the WWII, the shipyard is referred as Wärtsilä Helsinki shipyard or simply as Helsinki shipyard. The other shipyards located in Helsinki in Katajanokka, Suomenlinna, and Vuosaari, are referred by those names.
companies in Turku on the banks of the river Aura, Ab Crichton and Ab Vulcan, which were merged into one company, Crichton-Vulcan in 1924. Crichton sold one third of its production to Russia, mostly to the Russian Navy between 1867 and 1918 and the rest to Finland.\(^{167}\) In the interwar period, domestic orders were predominant while western exports remained minimal.

During the interwar period (1917-1939) in the independent Finland, two interconnected state decisions were particularly pivotal for the development of Finland’s shipbuilding industry; the decision to launch a large programme to build a navy for the independent country, and the decision to prefer Finnish shipyards in these procurements. Maritime historian Aaro Sahari underlines the impact of personal connections and intensive interaction between industrial, governmental, and naval actors in the development of Finland’s interwar shipbuilding.\(^{168}\) He argues that the naval programme and the preferential treatment of domestic shipyards demonstrated the influence of the emerging military-industrial cluster. The Finnish interwar military-industrial cluster was largely motivated by national security concerns and fear of the Soviet Union.\(^{169}\)

The interwar naval programme promoted the concentration and modernisation of the private shipbuilding industry in Finland. To ensure the expertise and financing required for the number of sophisticated naval ships, both Hietalahti and Crichton-Vulcan shipyards were acquired by a single manufacturing company, Kone- ja Siltarakennus.\(^{170}\) Considerable external impetus for technological development was given by technology transfer from Germany. Germany used private engineering companies to develop submarines in Finland to bypass the restrictions for the German military industry set by the 1919 Versailles treaty. Through this camouflaged operation, the Finnish shipbuilding got assistance to build diesel-electric submarines for the Finnish navy.\(^{171}\)

Another momentous decision for Finnish shipbuilding took place in 1931, when the Soviet Union concluded a trade agreement with Finland. Continuing ship trade with the large eastern neighbour had a critical impact on the survival of Finnish shipyards during the 1930s recession. This interwar trade with the Soviet Union built on the foundation of earlier Russian trade during the period of Finnish autonomy. In particular, many of the key engineers and businessmen who now engaged in the Soviet trade possessed experience and language skills

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that predated Finland’s independence. The Hietalahti and Crichton-Vulcan shipyards were able to secure almost all of the Soviet contracts.\(^{172}\)

The Finnish state also owned shipyards and naval docks in Helsinki, Suomenlinna,\(^ {173}\) and Katajanokka, but in the interwar period, they were used mainly to repair naval ships and only minimally for production. All the Finnish ships of national importance in that era—the diesel-electric warships, submarines and the first Finnish-built diesel-electric icebreaker *Sisu* (1939)—were designed and constructed at the private shipyards of Crichton-Vulcan in Turku and Hietalahti in Helsinki.\(^ {174}\)

When the Second World War broke out in 1939, the Finnish shipbuilding industry was small, but it had a presence. The most modern shipyards were firmly in the hands of the privately-operated Wärtsilä, which had taken over Kone- ja Siltarakennus in the mid-1930s. This reorganisation of Finnish metal industries, strongly driven by the director Wilhelm Wahlforss (1891-1969), made Wärtsilä the unquestioned leader among Finnish shipbuilders in terms of production capacity and competence.\(^ {175}\)

After the war, the Soviet Union’s biggest impact on the expansion of Finnish shipbuilding resulted from the peace treaty rather than commercial agreements. Finland, having lost the war against the Soviet Union and the UK, was obliged to pay USD300 million in war reparations to the Soviet Union. Approximately one third of these payments consisted of ships.\(^ {176}\)

The influence of war reparations between 1944 and 1952 on the development of Finnish shipbuilding industry is a controversial topic. Contemporary commentators and post-war writers have a tendency to articulate the war reparations as the starting point for the modern Finnish shipbuilding.\(^ {177}\) More recently, economic historians have criticised these


\(^{173}\) The fortress island in the Helsinki archipelago, known as Sveaborg in Swedish, and as Viaborg until 1918.

\(^{174}\) For a review of pre-WWII state shipbuilding in Finland, see Björklund, *Valmet*, 1990, 13-16.


overwhelmingly positive accounts. Instead, they have argued that the war reparations did not create a new industry but only boosted a development that had started earlier.\textsuperscript{178}

From the point of view of the Finnish economy, the war reparations constituted an extra burden during the already meagre years of post-war reconstruction.\textsuperscript{179} During the Cold War, this point of view was not often presented in public; instead, the narrative of war reparations were transmuted from a Soviet diktat into a Finnish industrial feat.\textsuperscript{180} Frequently repeated, and supported by the fact that the Finnish shipbuilding industry had indeed expanded, war reparations became part of the myth of peaceful co-existence that contrived to build a bridge between the wartime hostilities and the mutually beneficial Cold War friendship.

The relatively uncontroversial effect of the war reparations that can be agreed on is that the building of close to six hundred war-reparation vessels necessitated a considerable increase in the Finnish shipbuilding capacity, and thus triggered a major restructuring of the industry. When the last reparation vessels sailed off in 1952, the Finnish shipbuilding industry had shipyards and workers available in the proximity of the Soviet markets with their dire need for just about anything. Wärtsilä was the only shipbuilding company with notable experience in building modern steel ships, and it outperformed the other Finnish shipyards in all sectors. However, the war reparations had created a possibility for other companies as well to enter the industry and find their niches in Finnish shipbuilding alongside the dominant Wärtsilä.\textsuperscript{181}

Alluding to Thomas Hughes, Karl-Erik Michelsen argues that the Finnish war reparation organisation constituted a major technological project with a single purpose: to organise national intellectual, material, and other resources to fulfil the Soviet demands and thereby survive a national crisis. War reparations, as major projects in general, enjoyed privileges within democratic societies. They created a national matter of urgency, and prioritised economic rationality and technical efficiency over everything else. As such, the war reparations predicated a transfer of power from the state to the technocratic groups of private industrialists.\textsuperscript{182} Aaro Sahari applies Hughes’ LTS theory in his study on the Finnish


\textsuperscript{181} The first complete re-evaluation on the war reparations and the Finnish shipbuilding based on archival research, Aaro Sahari, \textit{Valtio ja suurteollisuuden synty}, 2018.

\textsuperscript{182} Karl-Erik Michelsen, "Sotakorvaukset: Suuren teollisen projektin anatomia," in Suomen
shipbuilding industry during the interwar and post-war periods. Sahari argues that the most long-standing effect of the war reparation was the origin of the Finnish national style of administration when it came to the relations between the state and the shipbuilding industry. Instead of exclusive groups of experts, the state advocated established and stable structures and long-term planning that would facilitate industrialisation in a coordinated fashion.\textsuperscript{183}

At the beginning of the 1950s, the Finnish shipbuilding industry totalled fifteen shipbuilding companies altogether. The privately-owned Rauma-Repola, which later established its position as the second-largest shipbuilding company in Cold War Finland, opened its first shipyard in Rauma to contribute to the war reparation effort. Hollming, the other shipbuilder in Rauma, relocated artisans who were experienced in building wooden sailing ships from Eastern Finland to the Finnish west coast, to construct the wooden schooners that the Soviet Union had included in the war reparations.\textsuperscript{184} Laivateollisuus Oy, commonly called LATE, was founded in 1945 in Turku. LATE concentrated on wooden ships as well.\textsuperscript{185} Other smaller shipyards operated in coastal towns like Uusikaupunki, Pori, Hamina and Porvoo, and some on the shores of inland waters.\textsuperscript{186}

Figure 7: Shipbuilding locations in Finland after war reparations and in the beginning of the Soviet trade 1952.

\textsuperscript{183} Sahari, \textit{Valtio ja Suurteollisuuden synty}, 2018.
\textsuperscript{186} Inland shipyards included Ahlström’s shipyard in Varkaus and Enso-Gutzeit Lysyniemi shipyard in Savonlinna.
Thus, the Cold War did not initiate shipbuilding in Finland, nor did it initiate Finnish trade with its eastern neighbour. When the expansion of the production scale accelerated after the Second World War, it was in concert with the expansion of global shipbuilding. That was fuelled by the increasing demand for larger vessels and the new production technologies such as welding and the use of prefabricated sections. Standardisation, automation, and economies of scale in shipping, as well as the evolution of new ship types—bulk carriers, larger and larger oil carriers, and later container ships—revolutionised cargo handling, decreased transportation costs, facilitated worldwide economic transactions, and increased the global demand for new ships.

Between 1953 and 1974, the total production of merchant vessels according to Lloyd’s Register of Shipping grew over sixfold. Northern European shipyards, especially in Sweden and Denmark, invested heavily in modern production facilities and took advantage of the economies of scale and the rapidly rising demand for large tonnage. The centre of global shipbuilding had already begun to move from Western Europe to the Far East, an undeniable shift by 1955, when Japan surpassed the UK as the world’s biggest shipbuilding country. During the shipping boom, however, even the diminishing proportion of the global production kept the European yards solvent. On the whole, Western European ship production increased until the first oil crisis struck the industry in 1974.187

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Figure 8: Merchant ships launched (GT, 100 tons and more) in selected shipbuilding countries 1953-1974. Finland is the narrow black line on the bottom. Data: LRS.

Lloyd’s Register added Finland to its statistical country reports in 1953 when Finnish merchant ship production in gross tonnage (gt) totalled 38,301. Figure 8 illustrates how Finland’s contribution to the aggregate post-war merchant ship production was marginal at best. Finnish shipyards built less than 0.8% of the world’s total, while neighbouring Sweden built over 9.5%. Instead of the modest volume, it was the rate of Finland’s production expansion that was noticeable in international comparisons. In the course of the first decade after WWII, the volume of Finnish shipbuilding production doubled. Between 1953 and 1974, the Finnish merchant ship production rate outstripped the global ship production with more than a fivefold increase.

188 Lloyd’s Register, Shipbuilding returns. Merchant ships launched 1953, over 100 tons and more.
189 Total production (merchant ships launched, over 100 tons) in 1953 5,094,836 GT and 1974 34,624,410 GT. In Finland respectively 38,301 GT and 205,905 GT. Lloyd’s Register for Shipping.
The rapid post-war expansion of the Finnish Cold War shipbuilding system took place at a time when Finnish shipyards were kept employed almost entirely by Soviet orders (figure 9). In the early 1950s, the Soviet Union was almost the only customer of the Finnish yards and its share remained dominant throughout the first part of the Cold War.

When examining the role of the Soviet trade in the Finnish shipbuilding expansion, three aspects require closer consideration: Soviet influence on the Finnish industrial transformation in the early Cold War, Finnish dependency on the Soviet demand for ships, and Soviet dependency on the Finnish supply of ships.

From 1951 to 1955, the Soviet Union was almost the only customer at the Finnish shipyards. The reliance on the Soviet trade raised the question of whether the Finnish shipyards in the early 1950s were unable to sell ships to countries other than the Soviet Union. To some extent, the answer was yes.

![Figure 9: Ships (GT) completed in Finland 1952-1974. Data: SM Database for ships built in Finland.](image)

Having completed war reparations in 1952, the Finnish shipyards were not competitive on the Western markets where large and efficient production units dominated the business. The war reparation production had pushed the companies to expand their capacity but not to streamline their organisations or refine their cost-competitiveness. Assured revenues and the
lack of competition, accompanied by a shortage of raw materials and components, contributed to a situation in which Finnish ship prices were above the international level.\(^{190}\)

The politicisation of east-west technology transfer paradoxically benefitted the competitiveness of the Finnish shipyards on the Soviet market. The NATO countries founded the cooperative organisation Coordinating Committee for Multilateral Export Controls (CoCom) to establish a high-technology embargo against Socialist countries.\(^{191}\) Finland, like the other neutral European countries, officially remained outside the CoCom. Nevertheless, not wanting to jeopardise their relationship with the USA, the neutral Sweden and Austria agreed to follow CoCom regulations while keeping this cooperation in secret to maintain their non-aligned status.\(^{192}\) According to Jensen-Eriksen, Finland was also gradually incorporated into the Western embargo system in the late 1940s.\(^{193}\) Yet, with only a few exceptions, Finnish shipyards were able to continue their trade with the Soviet Union without CoCom interventions. Especially in the early phase of the Finnish shipbuilding boom, the CoCom restrictions boosted rather than restricted the Finnish manufacturing presence in the Soviet markets by reducing the number of western competitors.\(^{194}\) This corresponded with the experience of the other European neutrals that were occasionally able to benefit from their position between East and West.\(^{195}\)

The high demand in the Soviet Union did not mean that the shipbuilding business was always profitable or unproblematic. The Finnish shipbuilding industry was dominated by private companies, out of which Wärtsilä prospered, Rauma-Repola managed, and the others had varying experiences.

At the beginning of the bilateral trade in the early 1950s, the Soviet negotiators put extra pressure on Finnish government and shipbuilding companies to build more vessels, especially

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\(^{195}\) Switzerland’s neutrality enabled the Swiss industry to operate more freely in Latin America and expand bilateral economic relationship. Ursina Bentele & Sacha Zala, “Neutrality as a business strategy. Switzerland and Latin America in the Cold War” in Neutrality and Neutralism in the Global Cold War: Between or Within the Blocs? eds. Sandra Bott, Jussi Hanhimaki, Janick Schaufelbuehl, Marco Wyss, (London: Routledge, 2016) 178-195.
tankers. Whereas the Soviet Union demanded ten oil carriers, the Finnish negotiators insisted that four was the maximum number of new types of vessels the Finnish shipyards could possibly deliver. The most experienced steel ship builder Wärtsilä was at that moment occupied with icebreaker contracts, and in any case, had no interest in building the tanker ships they found unprofitable. It was not only the profitability of the tankers that diminished Finnish ability deliver to tankers to the Soviet Union, but also the lack of capital and the shortage of raw materials and machinery. Eventually Rauma-Repola agreed to build the four tankers, but it needed a special permission to make the foreign currency procurements of diesel-engines and other equipment.

The Soviet trade negotiators often conjoined the Finnish ship trade and Finnish loyalty to the Soviet Union. When the Finnish Consul-General G. Palmroth assured the Soviet negotiators in 1952 that Finland had every intention of increasing its ship export to the Soviet Union, the Soviet negotiators complained of the Finnish government’s lack of commitment to Finnish-Soviet cooperation by citing a Russian proverb: ‘We have a saying that the road to hell is paved with good intentions. You speak as if we should choose between good intentions and ships.’

In another case in 1952, however, the government did agree to intervene in private business by Soviet request. The Finnish Ministry of Foreign Affairs decreed that a Finnish shipping company, the Finland South American Line, should cancel an order for a large ice-strengthened diesel-cargo liner that Crichton-Vulcan had launched so that the shipyard could sell the vessel to the Soviet Union instead. The Arkangelsk eventually became the first in a series of twenty-two vessels. Seventeen of them were sold to socialist countries.

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197 Rauma-Repola to Formin 8.10.1952 on four tankers of 4000 tons to the Soviet Union; Rauma-Repola to Palmroth 14.8.1952; Encrypted message 25.8.1952; Encrypted message 22.8.1952; Minutes from a meeting between Palmroth, Enckell, Loshakov, Sosunov et al, folder 106, signum 58 B1, UMA.

198 ”Meillä sanotaan, että hyvillä tarkoituksilla on kivetty tie helvettiin. Te puhutte ikään kuin meidän pitäisi valita, ottaako hyviä tarkoituksia vai laivoja”. Minutes from a negotiation between Palmroth, Enckell, Loshakov, Sosunov et al, 9.9.1952, both in folder 106, signum 58 B1, UMA.

199 Mostly Soviet Union and one to Czechoslovakia. Id & Peter, Innovation and Specialisation., 2017, 29-30.
These excerpts illustrate the Finnish-Soviet dynamic in the expansion of the Finnish Cold War shipbuilding system at its beginning. The companies had a financial interest in building vessels that were profitable and not enormously risky. Material and immaterial constraints restricted what the Finnish shipyards could produce. Finally, and extra flavour to the state-industry interaction came from the confusion among the Soviet negotiators regarding the authority of the Finnish government in a market economy to dictate to private companies.

The role of state-run shipbuilding needs more elaboration. While it had been merely privately owned companies that launched Finnish industrialisation in the nineteenth century, state-owned companies had gained a strong role after the Finnish independence fuelled by economic nationalism. The state had entered into strategically important basic production that did not have enough private operators, like the mining company Outokumpu, or took responsibility for development that was too risky for private industry. The state metal engineering conglomerate Valmet was founded after the war to continue and repurpose the factories for military technology manufacturing to civilian metal engineering. When the Valmet shipbuilding group was established in a merger of the state-owned shipyards in Helsinki and Turku, a natural idea was to concentrate state orders to this state-owned company.

It would have been natural for the state shipyards to take a leading position in industrial modernisation, but rather than being a frontline innovator of new technology, Valmet’s role was to complement private production. Instead of taking the initiative, Valmet’s role was to accept the Soviet orders that were not attractive enough for private companies. It failed to receive profitable orders from outside the Soviet Union after the war reparations, and in 1954/1955, the company board of directors were already considering closing its loss-making shipyards.

The closure plan was not executed. Valmet continued to build ships because it had a national function besides its technical one. The state shipyards provided a counter-weight for the private companies and was more directly under the influence of political patronage. According to Sahari, Valmet became a necessary locus for flexibility that the state could use to deal with the discrepancy between the Soviet demand and the private supply in Finland.

During the first part of the Cold War, on the whole, the Soviet trade was a great opportunity for most Finnish shipyards. It was clear to all concerned that when a Finnish shipyard director

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in 1973 referred to ‘dark clouds raising from the east,’ he did not mean the Soviet Union but Japan and their efficient ship factories.\textsuperscript{204}

![Graph showing origin of ships registered in the Soviet Union (GT), 1948-1975.](image)

**Figure 10**: Country of origin, ships (gt) registered in the Soviet Union 1948-1974. The other noticeable Soviet exporters were the two Nordic tanker-builders Denmark and Sweden, and the socialist Poland and East Germany. Data: LRS.

From the mid-1950s onwards, the Finnish shipyards began to win contracts in domestic and western markets alongside the Soviet orders. As an example of Finnish Soviet-centric historiography, some historians explain this as a result of the expansion of the Finnish shipbuilding capacity that had finally expanded enough to satisfy the Soviet demand, and leave a surplus for other markets.\textsuperscript{205} As the Lloyd’s registrations show (figure 10), Finland had a disproportionately large sector among the Soviet trade partners, but was not alone. The decreasing pressure to sell all of its productions to its neighbour is better explained by international and domestic events that had an impact on the competitive position of the Finnish shipyards.

The end of the Korean War (1953) relaxed the western embargo against socialist countries, making it easier for the Soviet Union to purchase ships from other countries. The Suez crisis and the closure of the Canal (1956) forced cargo ships to bypass Africa on their way from Asia to Europe, which lengthened distances and escalated demand for new tonnage. This seller’s market forced ship buyers to turn to less competitive and the less experienced shipyards like

\textsuperscript{204} "Pilviä idästä," Wärtsilä personell magazine 1/73.

\textsuperscript{205} Id & Peter, *Innovation and Specialisation*, 2017, 31.
those in Finland. At the same time, Finnish domestic economic policy adjustments, including devaluation (1957) and the introduction of new ship financing schemes, improved Finnish competitiveness outside the Soviet Union.

Unlike in many traditional maritime countries, there was no considerable cross-ownership between shipyards and shipping companies in Finland.\textsuperscript{206} Even though the value of the Finnish foreign trade hiked up after the war, a considerable part of the new exports went to the ports in the vicinity on the Baltic Sea and the price per volume units increased. As a result, the need for merchant tonnage grew more slowly than would be expected based on foreign trade statistics. In addition, the Finnish shipping companies preferred foreign second-hand ships, against which the Finnish new builds were initially uncompetitive in terms of both price and quality.\textsuperscript{207} Only in the 1960s did the modernisation of Finnish shipyards and the devaluation of the Finnish markka enhance the competitiveness of the Finnish shipyards so that they could gain a share in domestic non-state orders. At the same time, Finnish shipping transformed rapidly from a low-wage industry to a high-cost industry that motivated shipping companies to diminish crew costs by automatizing and modernising their vessels.\textsuperscript{208}

During the Cold War, several Finnish industrial companies expanded their operations to shipping in order to ensure frequent, reliable, and affordable transportation from their factories and to the market. Occasionally, these industrial ship owners became among the biggest shipping companies in Finland.\textsuperscript{209} For example, the paper company Enso-Gutzeit was a founder of Finnlines, a major Finnish cargo shipping company.\textsuperscript{210} The oil refinery Neste came to possess the biggest tanker fleet in Finland in its attempt to decrease its structural dependency on the Soviet oil deliveries.\textsuperscript{211}

Orders from these Finnish companies marked the end of the post-war Soviet domination, and sometimes allowed the shipyards to enter into new areas. The 15 000-dwt tanker ship \textit{Tervi} that Neste ordered from Rauma-Repola in 1961 was such a springboard. The company had previous experience only in ships that were a quarter of the size of \textit{Tervi} but the growing unease about sole dependency on Soviet orders motivated it to take the risky project. While

\textsuperscript{206} Ojala & Kaukiainen, "Finnish shipping - a Nordic exception?" 2012, 151.
\textsuperscript{209} Ojala & Kaukiainen, "Finnish shipping - a Nordic exception?" 2012, 131-132; 151.
\textsuperscript{210} Id & Peters, \textit{Innovation and Specialisation}, 2017, 32.
not being economically rewarding, it proved that Rauma-Repola was a capable builder of advanced merchant vessels and yielded strategic rewards later with further orders.212

Crucial to later development was that the expansion of the Finnish shipbuilding system after the 1950s also included relatively sophisticated vessels such as an increasing number of passenger ferries and ships for both domestic and foreign companies. Passenger traffic in the Baltic and particularly between Sweden and Finland was frequent. The breakthrough in passenger car traffic set new requirements for ferries. The first modern Ro-Ro213 ship that was built in Finland for the Finnish-Swedish line was the _Skandia_, completed in 1961 at the Wärtsilä Helsinki shipyard. After that, the size and design of ferries developed rapidly. New routes, cheaper tickets, comfortable vessels, and the lure of on board duty-free shopping


213 Roll on/Roll off, a ship type designed to load wheeled vehicles along ramps on their own wheels without having to use cranes to load and unload the cars on board.
attracted new passengers to regular ferry lines and maintained a steady demand for new passenger vessels.\textsuperscript{214}

A considerable proportion of the increase in western contracts after 1967 came from cruiser ships. A breakthrough in this market segment was Wärtsilä’s contract for three cruiser ships for the newly-founded Norwegian-owned but Miami-based cruise line company, Royal Caribbean.\textsuperscript{215} New and valuable cruiser contracts came in the wake of the Royal Caribbean trio. In 1970, the Finnish maritime monthly \textit{Navigator} contemplated the Finnish success on the American cruiser market. Its analysis cited the growing interest among middle-class Americans in moderately-priced Caribbean cruisers, amendments to US ship regulations that forced the shipping companies to renew or extensively repair their vessels, and the special requirements these sophisticated floating hotels implied for the building shipyard, which made them unattractive to big, streamlined mass-production yards.\textsuperscript{216}

Among other factors that promoted Finnish competitiveness in the western shipbuilding markets at that time were the devaluation of Finnish markka by 31\% in 1967 and a moderate income agreement between Finnish employers’ organisations and labour unions that controlled wage increases.\textsuperscript{217}

The simultaneous development of the other branches of the Finnish metal industries during the 1950s and 1960s also contributed to the growth and stability of the Finnish techno-economic shipbuilding system. The expansion of domestic diesel-engine production increased Finnish control over supply chains and decreased the need for western-made imports that required convertible currencies. The Crichton-Vulcan shipyard in Turku produced diesel engines in its machine shop on the grounds of foreign licenses. In the 1950s, the licensed production increased and concentrated on Wärtsilä Vaasa factory, where the company gradually switched from licencing to their own R&D in marine diesel engines over the course of the 1960s.\textsuperscript{218}

Another critical event was the emergence of domestic steel. Before the Finnish steel manufacturer Rautaruukki Ltd started its steel-plates production in 1967, the Finnish shipyards had to import the irreplaceable hull-material from abroad: This exposed the ship

\textsuperscript{214} Histories of Finnish shipyards building passenger vessels and ferries for the Baltic seaways usually begin with the passenger ferry “Bore II”, completed at the Crichton-Vulcan shipyard 1938. Id & Peters, \textit{Innovation and Specialisation}, 2017, 17. After the War, the Nordic Passport Union (1954), immigration and price-differences between Finland and Sweden further increased the passenger traffic. Kaukiainen, Ullos Maailmaan! 2008, 432.


\textsuperscript{216} \textit{Navigator} 10/1970; Id & Peters, \textit{Innovation and Specialisation}, 2017, 60.

\textsuperscript{217} Seppo Tihonen, \textit{The Ministry of Finance. Two hundred years of state-building, nation-building & crisis management in Finland} (Helsinki: SKS, 2012), 179-180

\textsuperscript{218} Haavikko, Wärtsilä 1934-1984, 104-107.
production to a fluctuation in currency exchange prices and disruptions in supply. Rautaruukki refined the domestic ore into steel plates and ultimately into ship hulls, thereby increasing the self-sufficiency of Finnish shipbuilding. The state owned the majority and also the remaining shares were firmly in domestic hands. The shipbuilding companies Wärtsilä, Valmet, and Rauma-Repola were among the founders.\textsuperscript{219}

**Modernisation of the shipyards**

The international upturn in shipbuilding continued until the 1970s. The average size of vessels increased and the demand for new tonnage remained high after the Suez crisis. European and Asian countries invested in new, bigger shipyards. In Finland, the Soviet trade provided a relatively predictable and reliable basic load. Together with opening up of the western and domestic trade, it created a safe business environment in which the major Finnish shipbuilding companies were willing and able to invest in new shipbuilding capacity. Indeed, the modernisation of the global shipbuilding capacity made this necessary. Post-war anxiety and uncertainty thus gave way to confidence in the future prospects of the Cold War ship trade.

![Figure 11: Average size of vessels built globally and in Finland (GT). Data: LRS.](image)

The Finnish decisions to invest in the modernisation of shipyards provide insight into the horizon of expectations of the shipbuilding business at the turn of the 1970s. An example of this is Valmet’s strategic shift from a reluctant shipbuilder to willing investor. Due to a number of shortcomings in 1963, the Valmet board of directors made a strategic decision to downscale its shipbuilding branch and turn their focus from new builds to repairs. This strategy changed when the company appointed Olavi Mattila as its new director in 1964. The Soviet ship trade was a priority for him. Under Mattila’s command, in 1969–1970, Valmet decided to replace its old small Helsinki shipyard with a new modern production unit on the outskirts of the city in Vuosaari that would be spacious enough to construct the kinds of large ships they expected the Soviet Union being interested in buying.

From the beginning of the 1960s, the Soviet Union ordered fewer but bigger vessels. This trend followed the international development in the expansion of the tonnage. The increasing average size of vessels required new building berths and cranes. These were capital-intensive investments, which were affordable only through a reasonably high scale of production.

![Average size of ships built in Finland for the USSR (GT), 1952-1975](image)

**Figure 12**: Average size of vessels built in Finland (GT). Note especially the increase at the turn of 1960s. Data: SM Database for ships built in Finland.

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221 Björklund, *Valmet*, 185–186.
222 Id & Peter, *Innovation and Specialisation*, 31.
The beginning of the construction project was not unproblematic. Among other things, the intended site in Vuosaari was located next to a conservation area. However, the lure of industrial modernisation and two thousand new jobs converted the main political parties to supporting the project. President Kekkonen himself launched the construction site in 1971, and three years later the 380 meters x 56 meters building basin was ready.223

The concrete dimensions of the shipyard basin were an important factor that determined the company’s position among the competition. It was estimated that in 1969, the Katajanokka shipyard in central Helsinki was wide enough to contract for 5% of the vessels ordered globally; in 1975, the share was only 2% and there were 700 other small shipyards competing for the same orders. With its new shipyard, Valmet planned to concentrate on vessels ranging from 20 000 dwt to 100 000 dwt. It was a considerable upgrade, but did not, however, equip Valmet to compete against Japanese shipyards for the ultra large tankers over 200 000 dwt.224

The private shipbuilding companies conducted similar calculations. In 1969, Wärtsilä launched a series of investments that modernised its Helsinki shipyard and resulted in a brand new modern shipyard in Perno, Turku. Like Vuosaari in Helsinki, Perno’s location was outside the city of Turku where shipbuilding operations had room to expand in a way that had not been possible at their previous location on the banks of the river Aura inside the city.225

![Image](image.png)

**Picture 2:** The contract for five ice-going LPG-tankers from Norwegian shipping companies in April 1974 launched the construction of Wärtsilä’s new modern shipyard in Perno, Turku. At the opening ceremony, the company’s shipbuilding director Christian Landtman commented on the ship-class by saying that the ships were getting ever uglier, with the only comfort being that they cannot become much uglier in the future: “The extreme has almost been reached. However, if they are ugly, they are more efficient”. Perno’s larger building berth and modern facilities enabled Wärtsilä to compete for larger vessels. That the Norwegian shipping companies chose to order these rather sophisticated vessels from a company with no experience of the type, and from the shipyard that did not even exist, was a sign of trust in Finnish shipbuilding—or lack of an alternative in the booming market conditions. Landtman’s comment and the picture: *Wärtsilä personnel magazine 2/74.*

At the height of the international upturn in shipbuilding in 1974, Wärtsilä managed to gain contracts for five 75 000 cubic meter gas tankers for a Norwegian shipping company. This

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225 Christian Landtmanin interview in *Wärtsilä personnel magazine* 1/73.
order sealed the plan to invest in the new shipyard. Once again, President Kekkonen agreed to ceremoniously start the construction of the Perno shipyard. The head of state gave the order for the first blast that symbolically started the shipyard modernisation project, high representatives from several ministries and the Bank of Finland honoured the construction site by their presence, and a symphony orchestra played *Finlandia* by Jean Sibelius. This all underlined the impression that the Finnish shipbuilding expansion had a secure, state-supported function as the engine of Finnish modernisation.

The second largest private shipbuilding company Rauma-Repola decided to expand via acquisition. In 1973, the company bought up all the shares of the Nystads Varv Ab (Uudenkaupungin telakka Oy), a shipyard founded in 1892. The shipyard had previously participated in the Finnish-Soviet trade, building wood-cargo vessels, dry cargo vessels, and even some passenger ships. The most notable project was the ice-capable cruiser ship, the *Lindblad Explorer*, completed 1968-69, and a forerunner of Arctic and Antarctic cruiser tourism. However, according to Mikko Uola, the author of Rauma-Repola’s history, Rauma-Repola was not interested in the shipyard’s facilities and machines but its workforce, which at the moment of purchase was 900 people. In the 1974-75 upswing, Rauma-Repola suffered from an acute lack of skilled labour. Uusikaupunki was located conveniently in the proximity of Rauma on the Finnish west coast. Rauma-Repola could use it to build smaller vessels, borrow its electricians and plumbers, and take advantage of its ship repair experience. Rauma-Repola also had a regional interest in taking over the Uusikaupunki shipyard thereby preventing the south coast competitors, Wärtsilä in particular, from using it as its entrance to the Finnish west coast.

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226 *Wärtsilä personell* magazine 2/74.
227 *Wärtsilä personell* magazine 2/74.
Rauma-Repola’s other expansion in maritime technology in the 1970s occurred through serendipity rather than strategic planning. In 1970, the company directors decided to establish a large new machine workshop in Mäntyluoto, Pori, with good logistical connections on the shore. The plan was to produce large steel components for pulp mills and nuclear power plants. These markets did not open up. Instead, the newly founded Mäntyluoto factory was noted to be in the possession of a large production hall next to the deep sea just as the oil drilling in the North Sea was booming and there was a high demand for drilling drifts and platforms. Mäntyluoto completed the first Pentagone-type oil drilling drift in 1974 for a French customer. Thus, Rauma-Repola entered offshore business.229

Thanks to these modernization projects, by the 1970s the Finnish Cold War shipbuilding system eventually had the facilities to build larger ships and take part in the global shipbuilding expansion.

Cooperation and concentration
In the early days of the Finnish Cold War shipbuilding system, there were fifteen shipyards or shipbuilding units with different sizes, production capacities, and areas of expertise competing

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229 Uola, Meidän isä on töissä telakalla, 1996, 376-384.
for Soviet and domestic orders. During the first part of the Cold War, the number and variety of companies diminished, resulting in a situation where only four or five large shipbuilding companies coordinated the industrial dynamic within the system.

Originally, Wärtsilä was the largest and most experienced in building relatively sophisticated steel vessels; it clearly had the strongest negotiation power and ability to cherry-pick orders according to its technology and business strategy. Nine smaller wooden ship producers founded a cooperative body, the ‘Finnish Wooden ship Industry’ (Suomen Puulaivateollisuus ry) to increase their power to bargain for war reparation vessels and Soviet contracts. In 1952, when bilateral trade negotiations with the Soviet Union replaced the war reparation negotiations, the association removed the reference to wooden hulls, renaming itself the ‘Shipyard Association’ (Telakkayhdistys). The Shipyard Association was essentially an export cartel. It established uniform pricing and controlled the shares of the Soviet orders that each of its member shipyards could receive.230

Export cartels were neither uncommon nor illegal in the Finnish economy at that time. Forestry, as the leading export industry, had been entirely cartelized in the interwar period and domestic market producers also often coordinated their pricing. The Shipyard Association differed from the better-known forestry cartels, as its prime motive was not to establish a nationwide cooperative network to gain competitive power against big foreign companies. Instead, it was an instrument for the small shipyards to control and restrain their mutual competition for the Soviet orders.

In contrast to American antitrust campaigns, cooperative alliances remained quite common in Finland. They were even a preferred alternative to destructive price competition between domestic companies. From the narrow national point of view, export cartels did not harm domestic customers but rather increased the competitiveness of the small country in international markets.231 Finland introduced the first antitrust law in 1957, but until the 1980s,

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Niklas Jensen-Eriksen, "Industrial Diplomacy and Economic Integration: The Origins of All-European
the legislation focused on monitoring and controlling instead of aiming at the total prohibition of cartels. The law required companies to register their arrangements that restrained competition in a Cartel register between 1958 and 1992 in case they had an effect on domestic market. The legislators excluded export cartels from restrictions and registration.232

The Shipyard Association was not long-lived. The mutual interests that had joined the rival companies together at the turn of the 1950s vanished towards the end of the decade. The Soviets refused to negotiate with a cartel, which they saw as an ideologically deprecating symbol of exploitative capitalism. The association also suffered from growing internal conflicts of interest. One founding member, Rauma-Repola, had outgrown the other participants, which made the negotiations asymmetric and difficult. The members dismantled the Shipyard Association in 1962.233

The reorganisation of the Finnish shipbuilding system in the 1950s proceeded through mergers and closures towards a situation of only five notable shipbuilding companies. All of the big five employed over a thousand persons: Wärtsilä, Valmet, Rauma-Repola, Hollming, and Navire.234 The concentration of the industry facilitated official and unofficial cooperation among the major shipbuilding companies and their managers. In 1967, the seven industrial leaders—Wärtsilä, Valmet, Rauma-Repola, Laivateollisuus, Hollming, Reposaari machine shop (Reposaaren konepaja), and Uusikaupunki shipyard—founded their own group under the Finnish employers’ union for metal industries, Suomen Metalliteollisuusyhdistys.235

Later in 1975, after Rauma-Repola had acquired the Reposaari and Uusikaupunki shipyards, and Valmet bought up Laivateollisuus, the five remaining shipbuilding companies created an independent interest group, the Finnish Shipyard Association (Suomen Telakkateollisuusyhdistys, hereafter STTY), to represent the industry in the negotiations with the state and to maintain the industry’s public image. Within STTY, the companies cooperated on several other issues such as translating Russian specifications and coordinating shipyard workers’ education and training.235 In the spirit of the corporatist tradition of the Finnish

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234 Statistical yearbook of Finland 1976, table 95 establishments in manufacturing by the size of their personnel in 1974, item 3841, ship building and repairing according to SIC classification.

235 Uola, Meidän isä on töissä telakalla, 1996, 479; Landtman, Minnen från mina år vid Wärtsilä, 164.
welfare state project, the shipyards also collaborated in investigating job satisfaction and workplace safety to deal with the high turnover of the shipbuilders and bargain over wages.\textsuperscript{236}

The STTY was the public façade of the cooperation but not its hearth. From the early 1960s until the mid-1980s, the shipbuilding companies coordinated their actions unofficially within an informal group of top managers who were tied together by personal relations, similar backgrounds, and mutual trust. This ‘Club of Five’\textsuperscript{237} functioned effectively as an export cartel in the Soviet trade. The five shipbuilding directors divided the Soviet orders to the shipyards based on their established production structure. The aim was to prevent the Soviet Union from benefitting from the price competition between Finnish companies, support specialisation, and decrease costs of production through longer series. Though not illegal, the participants anticipated Soviet disapproval and kept the coordinated competition secret.\textsuperscript{238}

In addition to the cooperative culture in Finland, there is some evidence that the Finnish-Soviet trade favoured large companies and discriminated against small and medium-sized companies, thereby supporting concentration. This trend was also clear in the other industries involved in the Soviet trade. A study on the concentration of the Finnish-Soviet business in 1983 implied that the ten largest companies controlled over 58\% of the Finnish exports to the Soviet Union. Four of the top ten corporations were shipbuilders: Wärtsilä, Valmet, Rauma-Repola, and Hollming.\textsuperscript{239}

**Specialisation and technical development**

The Lloyd’s Register for Shipping began to classify merchant ships by ship type in 1969. At that time, the Finnish production structure appeared curious in comparison to the global trend towards standard types. Of all ships completed globally between 1969 and 1974, the majority of production comprised standard cargo ships. Oil tankers and combined bulk/oil carriers constituted a share from 38\% to 62\%, bulk carriers totalled 20\%–30\% and general cargo

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\textsuperscript{236} Timo Kauppinen, *Laivanrakentajien vaihtuvuus. Tutkimus seitsemällä Suomen telakkalla laivanrakentajien vaihtuvuuteen vaikuttavista seikoista*, a study ordered by STTY shipyards, 1973; Suomen Metallisteollisuusyhdistys, press release on the publication 31.5.1973; Text by Christian Landtman attached to the press release on the “Study on Shipbuilders high turnover”, MTA.

\textsuperscript{237} Viitosklubi. Name refers to the original number of participants. Another name, Kopplakunta, was a reference to Beagle Boys (*Karhukopla*) in then very popular Donald Duck magazine. Mikko Uola used the same reference to “Karhukopla” in relations to cooperation between Uusikaupunki shipyard and Hollming in desingin and building timber cargo vessels to the Soviet Union. Uola, *Meidän isä on töissä telakalla*, 1996, 345. Pekka Sutela refers to “Kämp Club,” named after the high-end hotel in Helsinki where the group was known to meet as they were unable to use shipyard facilities for the informal and secret cooperation Pekka Sutela, *Trading with the Soviet Union: The Finnish Experience 1944-1991* (Helsinki: Kikimora publication, 2014), 67.


\textsuperscript{239} Ari Salminen, *Tapaus tutkimus talouden, politiikan ja hallinnon keskinäisistä kytkennöistä: Suomen idänkaupan suuryritykset*. Valtio-opin laitoksen tutkimuksia, sarja A 63 (University of Helsinki, 1983), 11.
vessels 10–20%. Container ships, LNG carriers, and the fishing types totalled in the early 1970s less than 5%. The remaining class of miscellaneous vessels comprised only 3%–6% of the global ship production. In Finland, however, the class of the miscellaneous ships, which were too insignificant in global terms to be specified in the statistics, constituted over 16% of the total ship production.

The production structure matters because it situated the Finnish shipbuilding system in a certain competitive position. The intellectual property of a shipyard, together with its tangible constraints, determined the niches in which the shipyard could expect to be competitive. Even if the physical dimensions and facilities of two shipyards are similar, they may perform differently according to the expertise and capacity in design, organisational practices, and managerial style. Building tailor-made ships or short series of special purpose vessels was project-based business. The production occurred in temporary project form, rather than as repetitive manufacturing, and required an intensive coordination of myriad mutually interdependent tasks and specialised sub-contractor networks.240

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**Figure 13**: The structure of ship production by principal types in total and in Finland in 1970. Data: LRS. Comparisons with Swedish shipbuilding highlight the unusual trajectory of the Finnish techno-economic shipbuilding system. Sweden was also a small neutral European country

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with similar environmental conditions and a high-cost workforce, but as Figure 13 shows, with a very different shipbuilding structure. A key difference between specialisation strategies in Finland and Sweden was the average length of ship series. Swedish yards had invested in capital-intensive mass production. In serial production, the design and capital costs were spread over several vessels, and project learning further decreased production costs per single ship. For a while, Sweden was able to pay the highest salaries and still compete against low-cost Asian countries in labour-intensive production.\textsuperscript{241}

While the Finnish shipbuilding industry could not challenge Sweden in competition for large tankers, the Wärtsilä Helsinki shipyard sold several icebreakers to the Swedish Maritime Administration (Sjöfarstverket). As tailor-made, design-intensive special vessels, they fit badly within the streamlined mass production of the Swedish shipyard. Afterwards the Swedish disinterest in icebreakers provoked Martin Saarikangas (1937–), a shipbuilding engineer who started at Wärtsilä Helsinki shipyard in 1959, to describe icebreakers as ‘the scraps that fell from the rich man’s [Swedish shipyards’] table.’\textsuperscript{242} This might have been correct early in Cold War shipbuilding, when the risks of new types of complex vessels were considerable. As the shipyard’s experience accumulated, special purpose vessels were no longer risky scraps but highly valuable orders. Eventually, a focal source of Wärtsilä’s competitiveness in Sweden’s state contracts was its specialised experience and economies of scale. The Finnish and Swedish maritime administrations cooperated in negotiating for the icebreakers of the same type to get a bulk discount.

Shipyards could only compete for those ships that their customers want to buy. However, demand did not always precede the supply. The structure of the Soviet demand, the capability of the Finnish shipbuilding system to shape it, and its contribution to technical development within the Finnish Cold War shipbuilding system need more contemplating. Wärtsilä’s specialization in icebreakers provides an illustrative example.

The trigger for Wärtsilä’s ice-oriented strategy was domestic demand. The first post-war governmental icebreaker, the \textit{Voima} (Force) completed in 1953, proved to be a technical feat of engineering with its diesel-electric power transmission that generated an unprecedented 10 500 shp for two aft and two bow propellers. The shipyard had some pre-war experience in icebreaker building, but IB \textit{Voima} ushered in a new era. It was bigger and more powerful than


\textsuperscript{242} (“Isbrytare var de smulor som faller från rikemans bord”). Interview of Martin Saarikangas 5.2.2014.
any other seagoing Baltic icebreaker, and it indicated that welding was becoming a superior production technology compared to riveting in Helsinki.243

During the war reparation deliveries and the beginning of the Finnish-Soviet bilateral trade, the Finnish shipbuilding system had produced types that the Soviet Union needed and that the Soviets trusted the Finnish shipyards to be able to deliver.244 After the CoCom had relaxed its embargo and the Soviet Union and its allies rebuilt their shipyard capacity, the Soviet Union was able to satisfy its need for simple standard vessels elsewhere than Finland. The Soviet political leaders no longer needed to pressure Finnish shipyards to build the standard-types they did not want. Instead, they could benefit from concentrating the state orders for certain special purpose vessel types to the Finnish yards. Finland effectively became a part of the socialist division of labour.245 Technological competence, experience, and personal relations with the Soviets significantly determined what kind of a role in Soviet economic planning the Finnish shipyards could be given.

The icebreaker Voima demonstrated to the international audience that Wärtsilä was capable of building sophisticated vessels. A central actor in convincing the Soviet Union that Wärtsilä’s icebreakers were worth buying was director Wilhelm Wahlforss (1891–1969). Described as Finland’s ‘biggest capitalist and a true friend of the Soviet Union’, he succeeded in combining his responsibilities in big business and liberal political views with intensive cooperation with committed Communists and the socialist planning economy.246 He mingled with influential personages, and notably got along well with the long-standing Soviet statesman Anastas Mikoyan.247 His political support for the first three Kapitan-class Baltic icebreakers that Wärtsilä sold to the Soviet Union was crucial, as the Soviet administration would have prioritised icebreakers designed for the Polar region.248 In the aftermath of the Voima,

243 The Voima was not the first icebreaker built at the Helsinki shipyard. Before her, the shipyard had launched a small, private steam-icebreaker the Mercator (1910), and a combined icebreaker and submarine mothership Sisu (1939) and some harbour icebreakers. Neither was this the first project in which the Helsinki shipyard used welding. The new production technology had already been used in the interwar submarine projects.

244 According to Sahari, the Soviet intention was to maximize the tonnage instead of optimizing the quality. This explains the high number of outdated wooden sailing ships and simple barges included in the war reparations. Sahari, Valtio ja suurteollisuuden synty, 2018.


248 Esa Mattson, Suomen idänkauppaneuvottelut 1950-1965. Telakkateollisuuden idänvienti,
Wahlforss also managed to secure the first Soviet orders of polar icebreakers. The Moskva-class consisted of five polar icebreakers all named after Soviet heroic cities and eventually marked Wärtsilä’s breakthrough in the Soviet Arctic.

Personal relations were often crucial in obtaining the first order of a type. To continue along the path of technical specialisation, the shipyard needed to acquire material and intellectual technological assets to use the initial contract as a springboard to launch the shipyard into the international market. In the case of Wärtsilä’s icebreaker business, human capital played a central role. The head of the Wärtsilä Helsinki shipyard’s design bureau during the Voima project was the shipbuilding engineer Ernst Bäckström (1982–1963) who had accumulated experience in icebreaker design from the 1920s onwards. In 1956, the young shipbuilding engineer Christian Landtman (1922–) replaced Bäckström as the head of the drawing bureau and was soon promoted to be the director of Wärtsilä’s shipbuilding division. Under his leadership both Wärtsilä shipyards in Helsinki and Turku developed relatively large and skilled design offices with roughly eight hundred white collar engineers and designers—a rare occurrence at contemporary shipyards which usually tried to minimise fixed costs not directly employed in production.

The Western embargo also facilitated Wärtsilä’s establishment as the Soviet Union’s icebreaker supplier. In the early 1950s, CoCom classified icebreakers as strategic vessels, meaning that Wärtsilä Helsinki shipyard was among the very few shipyards in the world with some experience in icebreaker development and the option to export to the Soviet Union. Jensen-Eriksen has argued that by outsourcing part of its icebreaker building to Finland, the Soviet Union was able to dedicate its best shipyard capacity to building submarines and other naval vessels.

In the 1960s, the Wärtsilä Helsinki shipyard had the internationally recognised competence to design and build icebreakers, and more experience in the field than any other western yard. This afforded the possibility to improve its research and development activities. A project with the American oil company Exxon was especially momentous. In 1968, Exxon recruited Wärtsilä to participate in the largest post-war full-scale icebreaking test. The aim was to redesign and reconstruct the large oil tanker SS Manhattan into an icebreaking vessel, and to


Bäckström retired at the age of 75 in 1956. Landtman had come to Wärtsilä Helsinki shipyard from Valmet in October 1954. Until 1958, Landtman was both Technical director and the Head of the Drawing Office, since then he focused on being a full-time Technical Director. Landtman, Minnen från mina år vid Wärtsilä, 2011.

Landtman, Minnen från mina år vid Wärtsilä, 2011, 52.

test the possibilities of transferring oil from Alaska to the American East Coast using the ice-covered North-West Sea route. Wärtsilä’s responsibility was to carry through model testing of the new icebreaking bow, for which the shipyard set up a new ice model testing laboratory. Testing models in open waters was a widely used method in naval architecture, but ice basin tests were extremely rare at the time. The Wärtsilä Icebreaking Model Basin (WIMB) that the shipyard constructed in an old bomb shelter, funding it with American oil money and technically relying on Soviet experience, was only the second ice model testing laboratory in the world.

With the ice model laboratory, the shipyard was able to challenge existing theories of icebreaking and to apply the knowledge to design bigger, better, and more cost-efficient icebreakers. A concrete basin full of carefully frozen model-scale ice, together with some theoretical understanding of how data from model scale experiments translates into full-scale solutions, became a striking example of locally and materially embedded competitive advantage that was not easy to relocate or challenge.

Between 1952 and 1975, Wärtsilä Helsinki shipyard launched almost thirty seagoing icebreakers, most of which were sold to the Soviet Union. While the Soviet market was crucial to the specialisation in the narrow niche of icebreakers, it was not its cause. The Soviet trade merely opened a window of opportunity for the shipbuilding company to make the strategic decision to specialise. Wärtsilä could seize the opportunity because it invited technical, organisational, and personal experience both in building sophisticated vessels and in dealing with the Russians.

The ice-oriented specialisation strategy of the Wärtsilä Helsinki shipyard was an early example of the development of the Finnish techno-economic shipbuilding system towards production that was more design-intensive than labour-intensive. In a similar manner, the other Finnish shipyards also developed their own strategies.

A factor that underpinned the Finnish interest in special purpose vessels was pricing in the Finnish-Soviet trade. The Finnish-Soviet trade agreements defined the value of merchandise using market prices. The market prices for the common types of merchant vessels were easily available and depreciated in tough competition. This was not the case for tailor-made special purpose vessels, which provided an advantage for the Finnish shipyards in price negotiations, enabling them to ask for higher prices and receive wider profit margins.

252 Ross Coen, *Breaking Ice for Arctic Oil: The Epic Voyage of the SS Manhattan Through the Northwest Passage* (Fairbanks: University of Alaska Press, 2012), 37, 159-160.
In addition, the aforementioned secret cooperation between the shipyard managers had a crucial impact on technical specialisation. The shipyard directors had a gentleman’s agreement that each shipyard would be prioritised for the types they were already building. If the shipyard had no fear of entering into price competition against other Finnish shipyards, the risks of investing in new ship types decreased. Besides icebreakers, Wärtsilä concentrated on cruisers, Rauma-Repola focused on large general cargo vessels and tankers, Hollming received most of the small research vessels, and Valmet bulk carriers and accommodation vessels.

From the point of view of the Finnish economy, quality upgrading through technical specialization was preferable to bulk production. In 1970, Suomen Itsenäisyden juhlarahasto Sitra Foundation, an independent entity under the Parliament founded to mark the 50th anniversary of Finland’s independence, conducted a study of the competitiveness of the Finnish shipbuilding industry. The study advocated for industrial specialization, rationalization, and high degree of refining in shipbuilding. Because capital was scarce, and funds for export credits were inadequate, the study concluded that Finland should prioritise knowledge intensive production that contained most Finnish work.254

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2.3. The institutions and administration of bilateral trade and technology transfer

Clearing trade system
The institutions and administration comprised mechanisms that transmitted and intermediated trade exchange, payments, and techno-scientific cooperation. Together, they formed a fundamental infrastructure that contributed to the border crossing technology transfer and enabled the Finnish techno-economic shipbuilding system to generate profits by selling their products. The considerable share that the Soviet trade held in Finnish shipbuilding meant that the profit-driven shipyards in a market economy had to deal with a
socialist planning economy in which foreign trade was a governmental monopoly. While the multilateral ‘normal’ trade comprised the vast majority of the Finnish foreign trade, the ‘Eastern trade,’ the trade with socialist countries based on bilateral agreements, had a disproportionate effect on the Finnish economy. During the first part of the Cold War, the Finnish Cold War shipbuilding system adapted to this dualism.

The Finnish-Soviet trade was based on a bilateral clearing trade and payment system. The concept of ‘clearing’ in international trade refers to the ‘technique whereby financial claims are settled against each other in order to reduce them to a single claim and to minimise the number of payment transfers’. In this thesis, the clearing trade system refers to the bilateral trade and payment system between Finland and the Soviet Union.

The bilateral arrangements for transferring payments originated in the recession of the 1930s, when Western countries applied it to facilitate foreign trade despite the worldwide scarcity of convertible currencies. Finland concluded its first clearing payment agreement with Estonia in 1932. During and immediately after the Second World War, clearing arrangements were popular because they fit well with monetary control and enabled foreign trade without foreign currencies. In fact, in the late 1940s and early 1950s, most European countries conducted their foreign trade within the framework of different clearing arrangements. However, the capitalist world soon returned to multilateral arrangements and convertible currencies, Finland among them. With only a few exceptions, clearing payments became almost completely limited to trade with or within the socialist countries.

The clearing trade was not like barter trade in which goods or services were directly exchanged. Instead, the clearing trade system comprised a set of state-level agreements and mechanisms to balance the aggregate value of the goods, services and financing items. Nevertheless, the bilateral clearing system tied the two countries together as the returns from the imports were valid only for purchases from the other country.

The clearing trade system increased the role of administrative control, cooperation, and interference in the Finnish-Soviet trade. In a market-based trade system, a ship buyer makes the purchasing decision based on a consideration of whether the price of the ship is worth the expected future revenues. Commercial shipping companies decide the size and specification of a new vessel based on their business strategy and market expectation. They invite tenders

257 The so-called Helsinki Club agreement in 1957 ensured the convertibility of the Finnish markka even though Finland did not originally join the OEEC due to the resistance of the Soviet Union. It facilitated the move from bilateralism to multilateralism in the Finnish foreign trade with non-socialist countries. Hjerpe, “Finland’s foreign trade and trade policy in the 20th century”, 1993, 69.
directly from suitable shipyards, or use a broker. Then, they select the contractor from among the most competitive yards based on price, terms of delivery, and ship design and specifications. In the Soviet trade, the shipyards needed to negotiate with all of the layers of the Finnish and Soviet foreign trade administration. Because the value of the exports and imports between the two countries needed to be equal, several state and industrial organisations controlled who could export, as well as what and how much. This brought an extra layer of negotiations to the competition for new contracts.

Figure 14: A simplified chart on the trade negotiations in the Finnish-Soviet ship trade based on the clearing system from the point of view of a Finnish shipyard. By the author based on various sources on the Finnish-Soviet trade institutions including: Laurila (1994), 59-74; Tieteellis-teknisen ja taloudellisen yhteistyön vuorovaikutus (1980), parts I-II.

To export a ship to the Soviet Union, the contract needed to fit within the five-year agreements on trade exchange. Since 1951, the Finnish-Soviet trade was adjusted to the Soviet planning schedule. Every five years between 1951 and 1990, the Finnish and the Soviet governments confirmed an Agreement on Exchange of Goods and Payments which outlined the volume and structure of the trade exchange intended during that five-year period. For example, the five-year protocol for the period 1956–1960 outlined that Finland would deliver 20 tankers of two sizes, 105 trawlers and other type fishing ships, 15 rescue tugs, 15 tug boats for lakes and rivers,

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15 cargo ships, 8 motor ships, up to 300 barges, one 10 500 shp icebreaker, and two 20 000 shp icebreakers with the total value of 3 110 billion roubles.\textsuperscript{259}

The five-year agreements were specified in annual protocols, ‘Protocols for the exchange of goods’ (Tavaranvaihtopöytäkirja or TVPK). For example, the protocol for the trade exchange in 1968 enumerated that the Finnish ship quota included one icebreaker of 22 000 shp, one cable vessel, 3 motor cargo vessels of 12 500 dwt, 9 timber cargo vessels of 3 400 dwt, 8 ocean-going tankers of 4 600 dwt, 3 accommodation vessels, 4 motor cargo vessels for inland waterways of 1 800 dwt, spare parts or ship engines for 500 thousand roubles and ship repairs for the value of a thousand roubles.\textsuperscript{260}

From 1967 onwards, a central forum for bilateral trade negotiations was the Permanent Finnish-Soviet Intergovernmental Commission for Economic Cooperation (Sosialististen Neuvostotasavaltojen Liiton ja Suomen Tasavallan pysyvä hallitusten taloudellinen yhteistyökommisio, usually shortened to ‘Talouskomissio’, and hereafter the ‘Economic Commission’). This new inter-governmental body was founded by presidential decree to advance the economic cooperation between the two countries. The Economic Commission received a permanent secretariat in both Helsinki and Moscow, and it convened each autumn for an annual general meeting to study trade-related questions, to develop the economic relations further, and to discuss commercial and other agreements related to economic cooperation.\textsuperscript{261}

The Economic Commission established a standing forum for Finnish-Soviet trade policy discussion in a way that underlined the special nature of the Finnish-Soviet economic relations. It was not the only bilateral commission that the Soviet Union had with capitalist countries, but it was the first of them and it had the highest-ranking chair.\textsuperscript{262} The first Soviet chair appointed was Nikolai Patolichev, a long-time Minister for Foreign trade. The Finnish government, having already nominated a relatively unknown Bank of Finland board member to the task, had to change its candidate to a more prestigious politician. Minister Ahti

\textsuperscript{259} Agreement between Finland and the Soviet Union on trade exchange, 1968, folder 45 “Suomi-Neuvostoliitto TVPK:t 1945-1968”, signum 3279, SPA.

\textsuperscript{260} Agreement between Finland and the Soviet Union on trade exchange, 1956-1960, folder 45 “Suomi-Neuvostoliitto TVPK:t 1945-1968”, signum 3279, SPA.


\textsuperscript{262} In 1987 the Finnish Embassy in Moscow concluded that only China, India, and Finland had a vice Prime Minister Vladimir Kamentsev as the chair of the bilateral commission, other countries having to settle for lower-ranking officers. PM Finnish Embassy in Moscow 149, 9.3.1987 no 149 “Clearing-maat Neuvostoliiton ulkomaankaupassa,” folder “ITÅ-clearingit, synoptiset taulukot, sopimuksista, sis. muistioita 1980-luvulta 10 v(2006),” SPA.
Karjalainen (1923–1990) from the Centre Party was President Kekkonen’s close ally and matched the rank of the Soviet representation.263

The Economic Commission created a direct link between the Finnish and the Soviet governments, and incorporated the Finnish industry into the state-level decision making. In addition to the chairs, the 18–20 permanent members of the commission represented relevant ministries, the Bank of Finland, and big industrial enterprises.264 Such an extensive representation from the business world in an intergovernmental organ was compatible with the corporatist practices in Finland, blurred the distinction between business and politics, and helped to cohere the political interests in the Finnish-Soviet relations with technical and economic possibilities.

In Finland, the Ministry of Foreign Affairs coordinated the exports to the Soviet Union. Specifically, the Foreign Trade Department within the ministry had a central role in the Soviet trade administration as it also prepared the international trade agreements, coordinated the work of bilateral economic organisations, and participated in export promotion.265 The Ministry of Trade and Industry coordinated the imports from the Soviet Union that also participated in the preparation of trade treaties, export control, and export credit guarantees.266 The two ministries collected the lists of export and import plans from the industrial organisations, who had gathered them from their member companies. In shipbuilding, the central organisation was the Federation for Metal Industries in Finland.267

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In the Finnish-Soviet ship trade, the supply side was usually quite unproblematic: Finnish shipyards were willing to sell ships to the Soviet Union through clearing. The long planning horizon of the clearing trade safeguarded a basic load, relatively high prices, and opportunity to optimise the use of shipbuilding capacity. The shipyards enjoyed economies of scale, low transaction costs thanks to the central coordination, and low marketing costs, as well as some counter-cyclical effects that balanced the global trade fluctuations.268

The Finnish shipyards were not tied to state-level bilateralism in a way that meant an obligation to import from the Soviet Union in order to export ships. Yet, the bilateral
framework restricted their opportunities to sell ships to the Soviet Union. Finland imported only a few products, mainly crude oil, from the Soviet Union. Thus, the market price of oil and the Finnish capacity to absorb Soviet oil determined the limit of the bilateral trade exchange. This oil limit engaged the Finnish industrial companies in a zero-sum game in negotiations on trade quotas: the more expensive vessels the Finnish shipyards exported the less room there was for selling forestry, agricultural, or textile products. Unlike the small and medium-sized companies, the Finnish shipbuilding companies enjoyed a privileged position in the Finnish-Soviet trade negotiations. The shipyards negotiated their contracts independently and typically the ships were included in the 5-year protocols even before negotiation on other quotas.

In addition to the Finnish shipyards’ willingness to sell, a ship contract required ability of a Soviet organisation to buy. The Soviet Union was a centrally coordinated command economy, and its demand for the Finnish ships was determined as a part of the hierarchical state planning. The State Planning Committee Gosplan administrated the plans and adjusted them according to the available resources, estimated domestic output, and prevailing economic policy doctrines. The Gosplan created the frames within which ministries and the end-user organisations were able to purchase ships from abroad.

The foreign trade in the Soviet Union was conducted by Foreign Trade Organisations (FTOs). In commercial negotiations, in which the contract price was determined, the negotiating partner was a certain FTO. Most often it was the Soviet FTO for ship trade V/O Sudoimport, which represented the buyer and payer of the vessel. The counterparts of the Finnish shipbuilders in technical negotiations, where technical details of the ships were specified, were ministries and end-user organisations. Often the Ministry of Merchant Marines (Morflot) or the Ministry of Fisheries.

After a Finnish shipyard had contracted for a Soviet ship order, there was still one more hoop to jump. Finland controlled the Finnish-Soviet trade by export licensing system: all exports and imports to and from the Soviet Union needed a licence from the Finnish Licensing Office. Export licensing, allegedly controlling the clearing balance, had indirect but significant connections to both international and domestic politics. Even though Finland

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272 V/O short from Vsesojuznoe Objedinenie, all-soviet group, Sudoimport meaning ship import.

273 In the late 1980s clearing-based export, a permit was required for all deals over FIM2000. If convertible currencies were used, the permit was required but automatically granted. Laurila, *Finnish trade with the Soviet Union*, 1995, 70-71.
never joined the Western coordination committee for export of strategic technology CoCom, the NATO countries generally accepted the Finnish licensing system as proof that Finland controlled its trade with the Soviet Union.274

The export licensing system also formed an administrative mechanism of protectionism. According to an established rule of thumb in Finland, the Licensing Office allowed less than 20% of foreign content in the products exported through the clearing system. The rationale was to prevent third countries from using the Finnish-Soviet clearing trade as a channel to sell goods to the Soviet Union at the expense of Finnish industry. Unlike CoCom, which had lists of specifications of ships that were under export control based on their tonnage and purpose, the Finnish rules were open to interpretation. The Licensing Office had the potential to enforce political decisions about who was allowed to export and what. Especially at the beginning, export licensing was implicated in domestic political struggles.275

Finland also required an import licence for certain products, particularly crude oil, which could compete with the Soviet imports.276 The main reason for this restriction was to ensure the highest possible amount of Soviet imports in order to enable the maximum Finnish exports to the Soviet Union. In practice, the state-owned oil refinery held a monopoly on oil imports and was forced by political leadership to buy its raw material from the Soviet Union.277

Unlike most Soviet satellites, Finland’s energy infrastructure was not entirely dependent on Soviet supply. Even though the Finnish state-owned oil refinery Neste was optimised for processing Siberian oil, the Finnish and western tanker fleet was theoretically capable of supplying oil from elsewhere if the Soviet Union decided to stop its oil deliveries to Finland. In that sense, the Finnish energy product import was significantly more flexible than the pipe-based transfer of natural gas in eastern and central Europe.278 Instead of the Soviet energy, the Finnish economy was dependent on the Finnish exports to the Soviet Union enabled by the oil import.

276 The guidelines changed throughout the Cold War. In the late 1980s clearing-based import, a valid import licence was required from the import of oil, food and animals. If trade with convertible currencies was possible with countries that had a clearing mechanism with Finland, all imports required an import license. Laurila, Finnish trade with the Soviet Union, 1995, 70-71.
278 The use of energy export to Western countries as a political instrument was, as demonstrated, characterised by conflicts and compromises and it was rarely as powerful as it was thought to be. For Soviet gas infrastructure in Western Europe: Per Högsei, Red gas: Russia and the origins of European energy dependence (New York, Palgrave Macmillan, 2013); Anna Åberg, A Gap in the Grid: Attempts to introduce natural gas in Sweden 1967-1991 (diss. KTH: Stockholm, 2013).
Because the clearing trade required active coordination and control from the administrative level, it concentrated a significant amount of decision-making power in the hands of civil servants and experts without parliamentary responsibility. This technocratic governance that had the potential to shape the welfare of thousands of individuals as well as the success of companies, was never really problematised in Finland.\footnote{Salminen, Tapaustutkimus talouden, politiikan ja hallinnon keskinäisistä kytköksistä, 1983, 3-4.} The original reason to opt for clearing system in the Finnish-Soviet trade was the lack of hard currencies in both countries, but it was undeniable that the elements of central coordination and technocratic administration also adhered well to the Finnish tradition of consensus and corporatism.

**Clearing payment system**
The clearing payment system refers to technical inter-governmental arrangements of sending and receiving payments via specific clearing accounts in the Bank of Finland and the Soviet Bank for Foreign Economic Relations (VEB). A Finnish company claimed payment for its exports through a Finnish commercial bank, which contacted VEB which in turn invoiced the Soviet buyer. The Soviet buyer paid to the VEB in roubles. After receiving the payment, the VEB notified the Bank of Finland. After the Bank of Finland received the payment order, it paid for the Finnish company using the Finnish markka.

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Figure 15: A simplified chart on how a Soviet buyer paid for a Finnish ship through the clearing payment system. By the author based on various sources on the Finnish-Soviet trade institutions including: Laurila (1994), 75-86; Tieteellis-teknisen ja taloudellisen yhteistyön vuorovaikutus (1980), parts I-II.
Post-war shipbuilding was a highly capital-intensive business for sellers as well as for buyers. The shipyard needed to organise pre-delivery financing to pay for its design, raw material, and workforce over a construction period of months or even years. The ship purchaser needed to find liquidity to cover the ship price, even if the investment payback period of a merchant vessel was likely to be longer than the period preferred by commercial banks.

In the 1950s and 1960s, the terms of pre-delivery and post-delivery financing became common deal-breakers in the global shipbuilding competition. In principle, no ship was built without external financing arrangements. Traditionally, ship owners had financed the ship through joint-stock companies and credit schemes. Charter-backed, and later on, asset-backed credit schemes gained popularity as industrial shippers wanted to motivate shipping companies to upgrade their tonnage to larger and more economical vessels.

Western European shipyards had usually received part of the ship price from the customer during the construction period. When post-war Japan launched an ambitious state-led industrialisation project, Japanese shipyards had the chance to grant lucrative credits for their customers to cover up to 70% of contract prices with a reasonable interest rate and generous seven-year payback period. Credit plans used as a weapon in shipbuilding competition was not a new invention. Shipyards had since the nineteenth century occasionally granted credit for reliable ship purchasers in order to compete during periods of low demand. In the interwar period, state-subsidised credit schemes had entered into international shipbuilding as an instrument for competing against British dominance, and to salvage domestic shipbuilding following the 1930s recession. Finnish ship buyers also benefitted from the competition. In 1967, the Finnish state oil refinery Neste bought a large tanker ship from West Germany, and was able to negotiate a payback period of ten years, with the four first years without repayments.

The clearing payment system became crucial to the Finnish techno-economic shipbuilding system, because it enabled extensive Finnish-Soviet trade even if both the Finnish sellers and the Soviet buyers suffered from a chronic lack of capital. The Soviet possibilities of buying from the international markets were restricted by the limited exports. The chronic distrust of the West also advocated the policy of keeping capital reserves high and debt low.

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281 In charter-backed financing, a new ship is bought with credit obtained from a commercial bank against a long-time charter for the ship and a mortgage on the hull. Stopford, *Maritime economics*, 2009, 272.
284 Hanson, *The rise and fall of the Soviet economy*, 2014, 84.
The clearing payment system committed Finland and the Soviet Union to bilateral trade as the revenues earned from exports to the Soviet Union were only valid for purchases for Finland and vice versa. Payments in the Finnish-Soviet trade were valued in clearing roubles, which was not a real currency but only a unit of the accounts. The balance of clearing accounts in the Bank of Finland and VEB reflected the difference between imports and exports.\(^\text{285}\)

As the Bank of Finland paid for the Finnish companies using the Finnish markka, which was a convertible currency from 1959, the clearing trade equalled the cash trade from the point of view of the Finnish industry.\(^\text{286}\) Cash payments were not the only advantage of the clearing trade for the Finnish Cold War shipbuilding system. Finnish shipyards also enjoyed advantageous prepayments from their Soviet customers. Since the 1950s, the Finnish shipyards typically received payments for ships in four parts: 25% when signing the contract, 25% when laying down the keel, 25% when launching the ship, and 25% when the ship was completed. Because the inward cash flows from the buyer accumulated faster than costs for the raw materials and labour, shipbuilding companies could invest their liquid cash reserves to generate financial profits.\(^\text{287}\)

A not insignificant detail in the Finnish-Soviet ship prepayment arrangement was that the Soviet Union did not demand that the Finnish shipyards provided bank guarantees for payments they received before they completed the ship. Wärtsilä’s director Wilhelm Wahlforss had originally managed to agree on this special treatment for his company in conversation with Soviet ministers in 1954.\(^\text{288}\) Later, the practice was expanded to all major Finnish shipbuilding companies.

According to a popular story, when the Soviet negotiators had asked for bank guarantees, Wahlforss replied by asking which bank the Soviet Union wanted Wärtsilä to guarantee. After the Soviet negotiators had recovered from their surprise, they had agreed with Wahlforss that Wärtsilä did not need bank guarantees. The slightly arrogant answer of a private entrepreneur from a small country to the leaders of the Soviet Union is typically read as a lesson on the importance of good personal relations in Finnish-Soviet affairs.\(^\text{289}\) This scene truly illustrated


\(^{286}\) Finland had joined the Bretton Woods monetary system in 1948 and tied the external value of Finnish Markka to the USD in 1951. However, due to Soviet reluctance, Finland was unable to join the OEEC that began to establish a system of convertibility for Western European currencies and it took until 1959 before the Finnish markka was freely convertible for foreigners. Kuusterä & Tarkka, *Suomen Pankki 200 vuotta II*, 2012, 225.


\(^{288}\) Bertel Långhjelm to Arvid Helsingius 10.3.1954, Wärtsilä keskushallinto 40, ELKA.

\(^{289}\) Landtman, *Mina år vid Wärtsilä*, 2011, 62-63;
the Soviet trust that the Finnish shipyards would deliver as they promised. It could also reflect the fact that the Soviet Union had a range of political and military weapons on hand to put pressure on Finland if the shipyards betrayed the trust. It is worth remembering that the big conglomerates at that time had better financial standing than most commercial banks in Finland.

The Bank of Finland was responsible for operating the clearing payment system in Finland. The principal role of the central bank was the one of technical administrator and controller of the balance.\textsuperscript{290} In practice, the way the clearing account was managed made the Bank instrumental in Finnish-Soviet trade politics. Unlike the strictly disciplined Soviet-Austria clearing trade and payment arrangement, in the Finnish-Soviet trade the clearing accounts were never precisely balanced. The account holders, the Bank of Finland and the VEB, occasionally credited the clearing deficit in order to lubricate the bilateral system.\textsuperscript{291} This administrative flexibility was often crucial to the ship exports, for which the individual orders were vast and the fluctuation of the large prepayments easily knocked the accounts off balance.

The Bank of Finland staff were usually economists by training. They hardly viewed bilateral clearing payment as an ideal system, especially when the parallel system of convertible currencies and multilateral agreements existed. Evidence also suggested that clearing trade made the trade structure too rigid to adapt in the long run, which could lead to problems in competitiveness.\textsuperscript{292} Besides its theoretical disadvantages, there was also international pressure to abandon bilateralism. The International Monetary Fund (IMF), which Finland had joined in 1948, had systematically urged its member states to abandon bilateralism because it restricted trade development and discriminated against third countries.\textsuperscript{293}

In 1971, when Austria shifted to convertible currencies in its trade with the Soviet Union, Finland remained the only Western industrialised country continuing notable clearing agreements with the socialist world.\textsuperscript{294} The bilateral trade was no longer a pragmatic choice but an outdated relic. Yet, the Bank of Finland was willing to overlook the shortcomings of

\textsuperscript{290} Salminen, \textit{Ulkomaankaupan erityisesti idänkaupan päätöksenteko}, 1978, 144.
\textsuperscript{293} Hirvensalo, \textit{Suomen ja SNTL:n välinen clearing maksujärjestelmä}, 1979, 13.
\textsuperscript{294} Laurila, \textit{Finnish-Soviet clearing trade}, 1995, 45
bilateralism for a long time. The clearing payment system had become a political instrument in state-level affairs, and a strategic asset for the shipbuilding industry.

The decision to continue with the clearing trade and payment system was strongly connected to the ship-financing question.²⁹⁵ The system provided the means to save scarce resources of convertible currencies, and financially enabled the higher level of export. When Mauno Koivisto, then director of the Bank of Finland and future President of Finland, pondered the future of bilateralism in 1973, he concluded that the clearing trade and payment system was crucial for the exports of machinery and ships; without clearing, the established high-volume ship export would not be possible because the Finnish economy could not afford a sufficiently large export credit scheme.²⁹⁶

**Scientific and technical cooperation**

A further notable set of elements in the Finnish-Soviet bilateral relations was related to Finnish-Soviet scientific and technical cooperation. It created a loose framework for border-crossing cooperation that involved knowledge-transfer or co-creation. The institutional foundation for Finnish-Soviet cooperation that was supposed to go beyond commercial exchange had been laid straight after the Stalin’s era in 1954.²⁹⁷

The Soviet proposal for scientific and technical cooperation was a political instrument for several political and economic goals. During Nikita Khrushchev’s era (1953-1964), the Soviet Union’s commercial interaction with foreign countries on the whole increased, with a special focus on machinery. Scientific and technological cooperation included the transfer of knowledge and expertise, which were increasingly perceived as the key factor in Soviet modernisation. Scientific and technical cooperation also provided way to bypass the Western embargo through the non-commercial channel of technology-transfer and promote the doctrine of peaceful coexistence.²⁹⁸

²⁹⁶ Notes SP 8.3.1973 from a meeting on Eastern trade. Archive of Mauno Koivisto in National Archive (hereafter Koivisto) 119, NA.
The Soviet Union had previously implemented these scientific-technological cooperation agreements with its socialist allies in Eastern Europe and China but Finland became the first western country to sign such an agreement with the Soviet Union. During the following years, the Finnish-Soviet agreement became an exemplary model for the other East-West cooperation agreements. Whether the Finnish leadership wanted it or not, this made Finland into a showcase for peaceful coexistence between socialist and capitalist countries.

The imperative of the Finnish Cold War foreign affairs was to stay out of any political and military cooperation that would seriously challenge the neutrality of the country. Keeping this in mind, entering into scientific and technical cooperation with the Soviet Union was a relatively harmless concession to demonstrate a willingness to cooperate. Moreover, the Finns managed to steer the cooperation further away from sensitive topics, such as nuclear technology and energy production, towards fields with no direct military applications such as history, linguistics, and veterinary sciences. The first Finnish chair of the Scientific-Technological committee was Kustaa Vilkuna, a close friend of President Kekkonen and a Professor of Ethnology.

During the first part of the Cold War, scientific-technological cooperation remained in the background of Finnish-Soviet affairs. The Economic Commission easily outshone the Scientific and Technical Committee in terms of political and economic importance, and membership was a valuable asset for large industrial companies. As a contrast, the Scientific and Technical Committee was occupied by academics.

For shipbuilding, technological cooperation merely meant that Soviet study delegations visited Finnish shipyards. The visitors’ explicit interests in restricted knowledge sometimes irritated the Finnish hosts, but usually the companies considered these visits a part of business cooperation and marketing.

Finnish shipbuilding initiatives in the field of scientific and technological cooperation remained rather cosmetic endeavours to diversify the Soviet exports, which consisted mainly of raw materials and energy products. An illustrative example was the ‘Eastern Trade Promotion Committee,’ coordinated by the central associations for metal and forestry industries in the 1950s. The committee advertised and imported a modest number of Soviet

cars in Finland to give the impression that the Finnish industry valued Soviet products and that the technology transfer had two, equally significant, directions.302

The beginning of the 1970s witnessed a new array of Finnish-Soviet bilateral agreements: an agreement in 1971 to continuously develop the economic, technical, and industrial cooperation between Finland and Soviet Union; a long-term plan in 1972 (Pitkän ajanjakson ohjelma, PAO) to develop economic cooperation, industrial cooperation, and specialisation, an agreement in 1973 between Finland and CMEA, and another long-term plan in 1975 to cooperate the Finnish-Soviet on natural sciences, social sciences, and the humanities.303

From the perspective of Finland’s foreign affairs, these new agreements continued to be relatively harmless concessions made to demonstrate Finnish willingness to cooperate, and thereby buy some room for manoeuvre. Initially, they had no remarkable consequences in the Finnish shipbuilding industry. In 1972, for example, the Soviet organisations hosted 419

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302 B. Långhjelm, Herlin on Eastern trade promotion committee 11.5.1959, folder “Idänkaupan edistämiskomitea,” Rauma-Repola, UPMA.
303 Sopimus taloudellisen, teknisen ja teollisen yhteistyön kehittämisestä (Agreement on the development on economic, technical and industrial cooperation between Finland and the Soviet Union), SopS 64/1971; Suomi-SNTL: Tieteellis-tekniisen ja taloudellisen yhteistyön vuorovaikutus, raportti Suomen ja Neuvostoliiton välisen yhteistyön metodologiaa koskevasta tutkimuksesta, osa I, Suomen ja Neuvostoliiton välisen tieteellis-tekniilisen yhteistoimintakomitean julkaisusarja (Helsinki, 1980), 19.
Finnish scientists, whose research projects ranged from archival research and ancient linguistics to study trips to Soviet breweries. In the same year, Finland had received Soviet scientists who had participated in symposia on Finno-Ugrian linguistics, cod fishing, and medicines. The most-attended panel related to the environmental protection of the Baltic Sea.\textsuperscript{304} Metal engineering industries had no representatives in the scientific and technical commission.\textsuperscript{305}

\textbf{Figure 16:} Key organisations involved in Finnish-Soviet economic, scientific and technical cooperation, adapted from: \textit{Suomi-SNTL tieteellis-teknisen ja taloudellisen yhteistyön vuorovaikutus}, part 2. Helsinki 1980, 54.

The main problem for Finnish-Soviet scientific and technical cooperation was common to all bilateral cooperation. Needs and resources had to be sufficiently compatible; one country needed to have something that the other country wanted. In the Soviet planning economy, the needs of industry and research were centrally coordinated. In Finland, the companies and research laboratories were independent from direct government supervision.

The organisational structure within the Finnish-Soviet scientific and technical cooperation developed similarly to the commercial cooperation; it became hierarchical and symmetrical.

\textsuperscript{304} The focus on scientific and technical cooperation related to the Baltic Sea stemmed from international cooperation beyond the Finnish-Soviet relations. Efforts to protect the Baltic marine environment in the 1960s and 1970s had resulted in the Convention on the Protection of the Marine Environment of the Baltic Sea Area, commonly known as the Helsinki Convention, in 1974.

\textsuperscript{305} Record of Finnish-Soviet Scientific and Technical Committee XVIII joint meeting in Helsinki 23.-25.5.1972, f. TT-komitea pöytäkirjat, UMA.
It was hierarchical in that it incorporated all the levels from industrial companies to state-level treaties, and symmetrical as the Finnish institutions came to mirror the organisational structure in the Soviet Union.306

**State financing and aid for shipyards**

The two critical problems in the Finnish economy during the Cold War period of industrialisation and gradual liberalisation were the balance of payments and increase in prices.307 It was natural, even necessary, for a small economy to expand its exports. Exports brought in the convertible currencies necessary to pay for imports. Yet, the Finnish imports of goods constantly exceeded the exports. From the 1960s onwards, the gradual trend towards lower or entirely removed custom tariffs further degraded the Finnish balance of payments. The domestic competitiveness on the path towards freer trade was closely connected to the problem of inflation that tended to be higher in Finland than in its competitor countries. All of this endorsed the priority of exports and export industries in domestic trade and industrial policy. In Riitta Hjerppe’s words,

> the interest of producers, for both export and the home market, have often been considered more important than the interests of consumers. Often, foreign policy and foreign trade matters have been considered superior to domestic policy.308

In this context, it is hardly surprising that Finnish domestic shipbuilding policy activities consisted mainly of measures and institutions aimed at supporting ship exports.

Compared to the ubiquitous presence of the Finnish-Soviet bilateral institutions, the domestic economic and industrial policy tools remained in the background in political discussions. Naturally, this did not mean that the domestic trade and industrial policy were non-existent, unimportant, or unconnected with Finland’s position in the Cold War. The two key links that connected domestic shipbuilding policy with the concerns over national security and welfare in foreign affairs were employment and economic dependency on the Soviet Union.

The first dedicated measure in the Finnish Cold War shipbuilding policy that addressed both Finnish-Soviet relations and domestic employment was the ‘export compensation system’ (**Vientikorvausjärjestelmä**) which the Finnish government introduced in 1950.309 Even though the clearing trade required no extensive credit schemes, the Soviet trade involved other

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elements of uncertainty. Contract prices were always fixed and turnaround times for delivery were long, which exposed shipyard revenue to inflation. The imminent risk was that the price, calculated during the contract negotiations based on production costs, would no longer be sufficient to cover the construction costs accumulated by the time of delivery. The export compensation system allowed companies that were exporting to the Soviet Union to receive ‘reasonable compensation’ for the domestic increase in prices. The law also provided some additional securities in case the Soviet buyer refused to accept or pay for the goods they had ordered. The mechanism was targeted at heavy engineering industries. Specifically, it covered the production of large, individualised capital-intensive products, namely ships and paper machines. The minimum time of delivery that qualified a project for export compensations ranged from six to ten months. The ‘Export compensation committee’ used a specific wholesale price index to estimate and verify how much the costs had increased.310

The export compensation system was originally only meant to be an interim measure to facilitate bilateral trade at the beginning of the Finnish-Soviet trade relationship, but it soon gained a firm position in the Finnish techno-economic shipbuilding system and was frequently extended.

A feature of the Finnish Cold War shipbuilding system was that all industrial actors plus the state adopted the strong stance that Finland did not subsidise shipyards. To put the export compensation system in perspective, it was a collective risk-sharing mechanism which constituted an integral and not unusual part of international trade. In general, different state guarantees and insurances were not considered as state-subsidies as long as the fees collected from the companies covered the compensations they were paid. The Finnish export compensation system was free of charge. In principle, this meant that the export compensation mechanism reallocated part of the business risk in the Soviet trade from the private sector to the public for political reasons.

Originally, the public expenses for the increased security in the Soviet trade were modest. Between 1950 and 1957, the export compensations cost for the state was FIM1.4 billion which comprised 1.25% of the total value of the exports contracts covered by the arrangement. The Industrial Advisory Board estimated in 1959 that the law had had a positive effect on 10 000 workers, and thus the system had to be considered cost-effective.311

311 Industrial Advisory Board committee report 1959, 89.
The public expenses of the export compensation system increased significantly after 1957 and the devaluation of the Finnish markka. For the Finnish shipyard industry, the combination of export compensations and devaluation was highly advantageous. The Finnish shipyards were now able to take advantage of enhanced competitiveness in exports while being partially protected against domestic inflation. Afterwards in 1976, a Ministry of Trade and Industry committee estimated that the export compensation system had covered approximately half of the costs of inflation for the companies.\(^{312}\)

If the policy aim was to inspire the Finnish shipyards to enter Soviet trade, it was a great success. The Finnish capitalist shipbuilders did not hesitate to sell ships to the Communist Soviet Union. However, the success of the Finnish ship export to the Soviet Union was only one shiny side of the coin. The other darker side presented a threat of high economic dependency on the Eastern superpower if the Finnish shipyards were unable to sell ships to any other country.

This fear particularly motivated western-oriented politicians and diplomats to support Finnish ship trade with western countries. Among them, Johan Nykopp, a Finnish diplomat in the USA in the 1950s, took it upon himself to decrease Finnish shipyards’ dependency on the Soviet Union through selling Finnish ships to the US.\(^{313}\) However, the price gap that allegedly constituted over 30% difference between the Finnish ship prices and international market prices, proved to be too wide to overcome.\(^{314}\)

In addition to higher prices and lower quality, the Finnish western ship export trade was also hampered by the lack of financing. Another attempt to invoke American concerns over the Finnish shipyards’ dependency on the Soviet Union took place in 1954. Then, the Finnish government requested a dollar loan from the US State Department in order to provide export credits for ship exports. This venture also came to nothing and was forgotten after a cabinet reshuffle in Finland. The new Prime Minister, Urho Kekkonen, apparently did not prioritise the redirection of Finnish ship exports from east to west.\(^{315}\) As a significant increase in western ship exports appeared inconceivable, those who were inclined to take the Finnish shipyard industry off the Soviet hook concentrated on the Finnish shipyards’ competitiveness in the domestic market.

In the 1950s, the Finnish shipping industry renewed its tonnage at moderate speed and relied strongly on foreign second-hand ships. Taxation was the major instrument of state support for

\(^{312}\) Cost-guarantee committee report, 3-4.

\(^{313}\) Nykopp was a Finnish envoy to the USA 1951-1954, ambassador 1954-1958; afterwards he moved from diplomacy to industry.


Finnish shipping companies. The option of extra-large tax deductions from net revenues under the condition that they re-invested the money in the shipping business remained until 1991.\textsuperscript{316} Another notable form of state support for shipping was allocated for ice-strengthened tonnage. It increased the share of vessels with high ice-classes in the Finnish-flagged tonnage but was also an indirect measure to support Finnish shipbuilding industry and its competitiveness in building these reinforced vessels.\textsuperscript{317}

Due to the generous export credit schemes available at the foreign yards, the domestic yards rarely succeeded in winning domestic contracts even if their efficiency and costs were at the same level. To fix this, the Finnish government introduced a new tax law in 1956, which eventually became the longest-lasting policy instrument in domestic shipbuilding. Commonly known as the ‘Lex Långhjelm,’ the tax law made the returns tax-deductible up to 4% when a shipyard granted credit for the ship buyer. This considerably decreased the costs of financing and enabled Finnish shipyards to grant supplier credit to their customers.\textsuperscript{318}

‘Lex Långhjelm’ had the dual function of supporting Finnish shipbuilding and facilitating the modernisation of the Finnish merchant fleet. The bill was named after Bertel Långhjelm, a board member and future deputy director of Wärtsilä, portrayed as ‘an intelligent man with an economic mind-set but lacking Wahlforss’s enthusiasm’.\textsuperscript{319} Perhaps it was fitting that maritime historians know him from the arrangement that significantly improved the competitive position of the Finnish shipyards in domestic markets until the late 1980s, but which never awakened any excitement at all in the public.\textsuperscript{320} At best, as Mikko Uola has described, the Lex Långhjelm ‘meant that the company could simultaneously show revenues and distribute dividends without having to pay taxes.’\textsuperscript{321}

\begin{footnotesize}
319 "Han var en intelligent man med mera läggning för det ekonomiska, men han saknade helt Wahlforss enthusiasm". Landtman, Minnen från mina är vid Wärtsilä, 2011, 52.
\end{footnotesize}
The bill for tax reductions enabled the shipyards to provide credits with competitive interest rates but it did not solve the general problem of scarcity of capital reserves. Buyers of large and expensive capital products usually required the seller to provide affordable financing schemes. The financial requirements in this kind of export, in which the time of delivery and payments was easily years rather than months, were different to the traditional exporting of paper and timber. In particular, the Finnish paper and pulping machine industry, which had already proved its international competitiveness, lacked competitive export financing arrangements. Klaus Waris and the state committee he chaired in 1954 articulated exports as the prerequisite for Finnish industrial modernisation; only specialisation would make the Finnish metal industry competitive and only export trade would make specialisation feasible. Thus, the public sector should facilitate the metal export by providing affordable export credit schemes that were not otherwise available in the firmly regulated Finnish capital markets.322

The Industrial Advisor Board continued highlighting the urgency of sufficient export financing schemes for the development of metal exports:

In the export of large objects the terms of financing, especially the possibility to provide credit, are in many cases the determining factor. In this matter we are behind our competitors, in terms of general opportunities and the interest rate. In addition, one has to note, that in the exports of metal products, we are still beginners and shaping them [the metal production] in intense competition, means hard work and costs.323

Figure 17: Merchant tonnage (1000 GT), total volume and tonnage per capita. Data: Kaukiainen (2008), 423.
The export credit agency, Vientiluotto Oy, was founded in 1956 to finance the long-term exporting of machines and ships. It was a combined effort of commercial banks and metal engineering corporations. Despite the state interest in exports, and the fact that the Ministry of Finance and the Bank of Finland were represented on the board, the state became a majority shareholder only in 1962. Consequently, the public sector became a key player in export financing also in Finland. Conservative newspapers suspected that state involvement was a sign of emerging nationalisation, and possibly even a baby step towards socialism. In retrospect, the introduction of state export financing schemes appeared more as an expression of the Finnish version of economic nationalism, characterised by a strong emphasis on exports and a hint of corporatism. In 1963, the export credit agency renamed itself Suomen Vientiluotto Oy – Finlands Exportkredit Ab (Finnish Export Credit Ltd).

Export financing made ship exports to western countries possible; it was essential for increasing western trade in the course of the 1960s and 1970s. The shipyards were among the biggest users of public export credits. At the end of the 1960s, the Finnish Export Credit granted over 60% of export credits to the exporting of vessels and oil drilling rigs.

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muokkaaminen kovan kilpailun vallitessa siten vaatii vielä paljon työtä ja kustannuksia.” *Industrial Advisory Board committee report 1959, 89.*


325 In 1963-1981 the state owned 55.6% of the shares, three commercial banks together 26.6% and big export-oriented corporations 17.8%. Herranen, *Valtion raha vauhditti* 2009, 36-47, 50.

Figure 18: Finnish ship deliveries based on financing, billion FIM (in 1975 value). Export trade of ships that required subsidised export credits meant principally trade to non-socialist countries. The Finnish exporting of ships that took place without dedicated export credits corresponded roughly with the Soviet trade. Data: *Committee report of export credit committee*, 1976, 4.

The introduction of export credits was combined with the establishment of state export credit guarantees.\textsuperscript{327} Guarantees are insurance-style countersecurity provided to the export credit agency to cover the risk of credit loss. The Finnish Board of Export Guarantees (Vientitakuulaitos, VTL) was founded under the Ministry of Trade and Industry in 1962 to support Finnish export trade.

One type of public export credit guarantees was particularly important to the Finnish shipbuilding industry. In conjunction with the reformation of export financing in 1962-1963, the old export compensation arrangement from the 1950s was replaced by a new cost-guarantee system (Kustannustakuu-järjestelmä, commonly known as K-takuujärjestelmä). The cost-guarantee system was politically controversial and decidedly dedicated to the export of ships and paper machines, as only the ‘domestic industrial products that could be clearly itemized’ and had a long delivery time were eligible.\textsuperscript{328}

Although it was denoted as a ‘guarantee’, the cost-guarantee system resembled state-supported insurance against the risk of inflation. From the administrative point of view, the cost-guarantee system was a sophisticated edition of the export compensation system. While

\textsuperscript{327} Vientitakuulaki (An Act of Export Guarantees), Säädk 479/1962.
\textsuperscript{328} Cost-guarantee committee report 1976, 5.
the export compensations had been free of charge, the cost guarantees were subject to a charge that initially totalled 0.01% of the contract price for each month. Unlike the export compensation system, the cost-guarantees never covered the whole contract price. The exact percentage of the company’s own risk was changed several times. Instead of lowering business risks to encourage Finnish companies to trade with the Soviets, the aim of the cost-guarantee system was to assist the shipbuilding industry to survive the abnormally high (over 6%) inflation.329

Competition between private companies which all needed public money to export was not an ideal situation for any country, let alone for small national economies with low cash reserves. After establishing basic domestic institutions for shipbuilding financing in the early 1960s, Finland chose to rely on international cooperation to control the use of state aid.

The Organisation for Economic Co-Operation (OECD), an intergovernmental organisation committed to stimulating economic growth by advancing fair markets and democracy, adopted a central role in regulating the battle over shipbuilding export credits. Because the OECD had its roots in the Organisation for European Economic Co-operation (OEEC), a Western European organisation coordinating American post-war financial aid, Finland had refrained from joining until January 1969.330 In the same year, the OECD Council reached an agreement on subsidised shipbuilding credits in export trade. According to this gentleman’s agreement, national governments could offer export credits that had a maximum duration of 8 years, for maximum of 80% of the ship price and a minimum net interest rate of 6%.331

The Finnish Export Credit Ltd adjusted its export credit schemes for shipbuilding according to the OECD agreement. Even though the OECD’s intention had been to halt a subsidy race, these ‘OECD export credits’ came to be widely understood as the generally accepted and expected zero-level of subsidised financing.332

Historian Timo Herranen argues that the Finnish special financing system disproportionately supported the Finnish-Soviet trade.333 The reasons behind the shipbuilding financing decisions during the first part of the Cold War varied depending on the time and point of view. If the early export compensation system in the 1950s had been initiated to facilitate politically

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331 Later 7.5%.
important Soviet trade, the Lex Långbjelm in 1956 and the export credit institutions introduced in the 1960s aimed to facilitate western trade.

Conclusions: A post-war techno-economic system in construction
Few associate the period between the Second World War and the first oil crisis—the era of superpower confrontation, economic boom, and technological breakthroughs—with stability. However, ‘stable’ is precisely the quality that Finns’ recollections assign to the maturing Cold War shipbuilding system. The construction of the techno-economic system began at the stage of insecurity about Soviet policy towards capitalist Finland and uncertainty about the future prospects of Finnish shipbuilding after the war reparations. In the course of the first decades after the war, the relationship between Finland and the Soviet Union stabilised. Finland became a more industrial and urban country by leaps and bounds. The Finnish techno-economic shipbuilding system gained momentum and political gravity. Indeed, at the stage of maturity in the 1970s, the shipbuilding system appeared to be consistent, stable, and profitable, and it had a strong presence in state-level decision-making.

This chapter has examined the construction of the Cold War shipbuilding system before 1975. It has contributed to the first two research questions on the characteristic structure and style of the shipbuilding system and on the state-industry relationship, evaluating how they were shaped by the Cold War.

During the period from 1952 to 1975, the Finnish shipbuilding industry sought to develop a techno-economic system that would better, consistently, and reliably fulfil the primary system goal of generating profits for the shipbuilding corporations by designing and building vessels. As such, the Finnish Cold War shipbuilding system was similar to any other commercial industrial system. Most of the critical problems that hampered the expansion of profitable production in Finland were familiar to other post-war European shipbuilding country as well: rapid technological change in ships and shipbuilding techniques called for new standards in productivity to stay in big business; capital intensive production required considerable financial investments in cranes and large building berths; global competition brought about the necessity of state-supported export financing; shipyards needed to maintain solvency in the narrow margin between competitive price level and inflating costs of production. At the shipyard’s floor level, the operation of shipbuilding in Finland and in the first part of the Cold War was not unique.

What made the Finnish techno-economic system in shipbuilding distinct in international comparisons was the set of system components, functions, and style that characterised the transformation of the shipbuilding system and its relationship with the state. This chapter has
approached the Finnish shipbuilding system building from three perspectives—the state politics, the industry, and the trade infrastructure.

Neither the post-war reparations nor the Cold War triggered shipbuilding in Finland, but they had a recognisable influence on how the structure and style of the techno-economic system developed. During the first part of the Cold War, Finland established a firm foothold in the turbulent world order by binding itself to both the western and eastern camps while situating itself in neither. The Cold War context reinforced old imperatives for industrialisation and introduced novel ones; it established a strong connection between national welfare, national security, and national prestige. For the Finnish shipbuilding system, the Cold War as an international framework meant new kinds of restrictions and opportunities for foreign trade and technology transfer. The Finnish shipbuilding industry, then, navigated uncharted waters seeking room to manoeuvre within the Cold War international order, domestic industrial drawbacks, and global economic forces. In doing so, it developed a distinct national style that embodied the Finnish cooperation culture and accommodated the special requirements of Finnish-Soviet bilateral relationship.

The bilateral institutions of trade and payments became critical for system development. Typically, national shipbuilding industries may have different practices, financing institutions, and products in export trade and domestic trade. In the Finnish Cold War shipbuilding system, there were three significantly different sets of institutions and practices: Eastern trade, western trade, and domestic trade. The bilateral scientific and technical cooperation with the Soviet Union also established its position as a part of dealing with the Soviet Union during the period, but its role in the Cold War shipbuilding system was symbolic rather than tangible. The political priorities in the Finnish-Soviet ship trade and technical specialisation provided the Finnish Cold War shipbuilding system with bargaining power in negotiations with the Soviet customers and supported the overall profitability of the shipbuilding.

The industry leaders decided to restructure the Finnish shipbuilding industry through investments and acquisitions primarily in order to adjust its capacity according to future expectations. The concentration of the industry and the cooperation between the biggest shipbuilding companies limited the competition. The co-existence of the western, domestic and eastern markets with their distinct market dynamics smoothed out market fluctuation. Together, they created an illusion of stable development.

As a constitutive element of national style, the Finnish shipbuilding system developed a certain type of relationship with the state. It acquired political weight both in international and domestic affairs. A decisive contributing factor was the Soviet needs for security and technology which met the Finnish interests in political and economic stability. Together, the
Finnish and Soviet political concerns moored the Finnish shipbuilding to the Finnish-Soviet relationship.

At the beginning of the Cold War, national security was the first priority both in Helsinki and Moscow, and the potential for using the Finnish dependency on the Soviet shipping trade as a tool in economic warfare remained a shadow on the horizon of expectations. However, when Finland’s ability to balance between the east and west gradually became recognised and trusted, the national security aspects of the technopolitics of Finnish shipbuilding moved to the background, to be replaced by the shipyards’ contribution to national welfare through providing industrial jobs and bringing in export revenues.

The theoretical demarcation line between the techno-economic system and its environment was defined by system goal and control. The actors and organisations that shared the system goal and were under its control would be included within the system. Based on this definition, did the state-level political and administrative actors and organisations constitute a part of the shipbuilding system or its environment?

The boundaries between the state and industry were extremely fuzzy. During this first period of the Cold War, the trade and industrial policy clearly contributed to the system expansion. The political support for the shipbuilding system was so strong and its opposition so weak that one could argue that the Finnish state was subscribed to the goals of the Finnish shipbuilding system. In addition to the domestic political actors, even some focal external powers such as Soviet foreign trade politicians and US diplomats occasionally contributed to the Finnish shipbuilding development. This was because the expanding Finnish shipbuilding industry was recognised as a potential technopolitical instrument to achieve their goals.

In terms of control, the question is more complicated. The Finnish shipbuilding industry could obviously not control the Finnish government or the Soviet foreign trade organisations. Nevertheless, the state and industry established personal and organisational networks that often provided an interface to communicate with the decision-makers face-to-face. Influencing decisions is a subtle form of weak control, which the directors of the Finnish big shipbuilding companies wielded as they participated in inter-governmental committees and corresponded with high-ranking politicians and civil servants. In the mature stage of the Cold War shipbuilding system, the state was not a part of the system, but it was definitely not a total outsider either.

Three overarching characteristics of the national style can then be observed here.

The first feature was the inclination towards consensus within the shipbuilding system. Instead of the open conflicts that featured in the early system, in the mature system all actors
preferred compromises to competition. This willingness to negotiate characterised the communications in between the state and the industry, and even between Finland and the Soviet Union.

The second feature was the important but blurry boundary between politics and business. Both industrial and state actors could claim that the ship trade with the Soviet Union was just business as usual, but in practice neither party hesitated to make the ships and contracts into a political tool if needed.

The third feature was the importance of impressions and appearances. Political historian Kimmo Rentola has on several occasions articulated how in the Finnish-Soviet relationship, both the actual situation and how it appeared from the outside were important. For example, the triangular drama between the Kremlin, Finnish political leaders, and Finnish Communists during the early Cold War was established as a game, in which ‘information was exchanged, and the stakes were adjusted, it was understood to give certain impressions, and it was understood to give certain things, impressions were created and received, and sometimes jests contained only the purest truth’.334 Finnish shipbuilding participated in this game from the beginning. When the high-ranking members of the Soviet politburo stepped to the Finnish docks to celebrate ship launches, it was not only creating business relations but also constructing the image of peaceful co-existence.

In public, the Finnish state leaders adopted the language of friendship and cooperation. The shipbuilding industry leaders also understood the power of rhetoric and public impressions. At this point, I want to return to the Perno shipyard construction site in 1974, where President Kekkonen opened the project by ordering the first explosion. The shipyard worker who detonated Kekkonen’s explosion revealed afterwards that he had added extra cement and lime dust to the site to make the explosion appear even more imposing.335 This incident sets the tone of the chapters of the disintegration of the Finnish Cold War shipbuilding system. The economic rationales and the material consequences of the detonation were real. In Finnish Cold War shipbuilding, there was also a close causality between what something was and what it looked like. However, there was not necessarily an exact correspondence between the tangible results and their reflections. There were often several technopolitical reasons to add some special effects to make the reality look more impressive.


335 *Wärtsilä* personell magazine 2/74.
3. Flagships of International Relations:
Technopolitics of shipbuilding, 1952-1989

Images of President Kekkonen sitting and singing with foreign political leaders, drinking vodka and selling Finnish icebreakers, are part of the popular imaginary of the politics related to the Finnish-Soviet ship business. Undeniably, Kekkonen adopted an active role in the Soviet trade. More than a few times the Finnish shipyard directors packed folders of their business projects for Kekkonen to take on his state visits. In the mid-1970s, Kekkonen was already credited as the ‘Master of the Eastern trade’: the supreme icebreaker promoter of Finland. From the perspective of the techno-economic shipbuilding system, this opens up questions on the nature of the technopolitical meanings, functions and practices of Cold War shipbuilding and the personal engagement of high political figures.

This section approaches the Finnish Cold War techno-economic shipbuilding system from the point of view of technopolitics at state-level strategic considerations and in personal political aspirations. Certain exceptional ship projects that made it on to the desks of state-leaders are employed as a lens: the Finnish-Soviet nuclear icebreaker project, a project to sell a conventional icebreaker to the USA, and a controversy over deep-sea submersible vessels.

Icebreakers and deep-sea submersibles are rare exceptions in global ship production. In the Cold War East-West trade, nuclear technology, submarines, and icebreakers were subject to increased scrutiny which was closely interwoven with questions of national security and prestige. Cases of exceptional products like these provide both methodological risks and rewards. Exceptionalism made the projects more strategic, more valuable, and more controversial than the bulk of the Finnish-Soviet ship trade. Yet, they provide a well-positioned window for exploring how these vessels were made into technopolitical instruments and who used them.

This chapter responds to the first research objective related to the structure and style of the shipbuilding system, by investigating the source for the impetus for a private shipyard to take it upon itself to design such an extraordinary vessel as a polar nuclear icebreaker. The section


337 Seppänen, Idänkaupan isääntä, 2011.
shows, then, that instead of customer demand, the trigger for the development came from motivated engineers, technical possibilities, and cultural context.

This chapter addresses the second research objective of the state-industry relationship by examining the agency of industrial actors in state-level relations, and the activity of politicians in support of the industrial endeavours. A president selling icebreakers or negotiating submarine exports offers an opportunity to examine state-level motives in technopolitical diplomacy as well. The section argues that while the active engagement of people in positions of authority was critical in several occasions, the high-ranking political actors were usually not the prime actors in the technopolitics of the Finnish Cold War shipbuilding system but the company managers promoting their products.

Finally, the chapter responds to the third research question on the disintegration of the Cold War shipbuilding system by examining how the technopolitical meanings, that made certain ship projects exceptional within the Cold War context, altered towards the end of the era.

### 3.1. Building technopolitical business relations on ice, 1952 – 1961

Icebreakers are expensive, sophisticated, and public special-purpose service-vessels. They can alter geographical constraints by opening sea routes through otherwise inaccessible ice fields and serve national purposes by assisting merchant, scientific, or military fleets. Thus, purely commercial and technical arguments are seldom enough to sell a ship. The need for an icebreaker is naturally framed by geographical factors but it is also socially constructed. For example, in Finland the demand for state icebreakers stemmed from industrial and cultural development that caused the Finnish government to understand uninterrupted seafaring to western countries as a critical condition for national and economic independence. The need for a certain type of icebreaker did not necessarily precede the technical development of such a vessel, because it is the technological development that opens up the possibilities for political considerations. Nevertheless, a shipyard typically required a customer to justify R&D investments.

In conjunction with the discussion on the technical specialisation of the Finnish Cold War shipbuilding system, the previous chapter described how the Wärtsilä Helsinki shipyard ended up developing its expertise in icebreaking vessels. Particularly at the beginning, the personal connections with high-ranking political authorities played a significant part in the shipyard’s entry into a new niche market. The Finnish-Soviet trade folklore tends to highlight the irreplaceable role of Kekkonen as an icebreaker salesman at the Kremlin. However, Kekkonen’s relationship with Wärtsilä’s director Wilhelm Wahlforss was anything but warm.

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and close. The strong aversion between these two leaders is highly visible throughout Kekkonen’s diaries.\textsuperscript{339}

Mutual interests created a working relationship between Kekkonen and Wahlforss in the early 1950s when Soviet statesman Anastas Mikoyan came to Finland in 1954 as the first Politburo member to visit Finland after 1947. During his visit, Mikoyan participated in the launching ceremony of the Kapitan Belousov, the first Baltic icebreaker that Wärtsilä Helsinki shipyard built for the Soviet customer.\textsuperscript{340} Obviously, a Soviet statesman of this calibre came to Helsinki primarily for other reasons than an interest in big ships, but as he honoured the shipyard with his presence, it gave Wahlforss a chance to start negotiations for the first polar icebreakers.

At this stage, Wahlforss needed Prime Minister Kekkonen’s help to arrange a high-ranking Soviet representative’s visit to the ship dock, and to push the exceptional project forward in the Soviet state planning administration situation at a point when the shipyard still had no experience of Arctic maritime technology.\textsuperscript{341} Kekkonen, running for President, needed all the political and monetary support he could get from the commercial elite.

During the ‘Night Frost’ crisis in 1958, President Kekkonen anticipated in his diary that in addition to the sit-down strike the Soviet negotiators held in the Finnish-Soviet trade negotiations, the Soviet Union would emphasise its dissatisfaction by cancelling the visit of Anastas Mikoyan to Finland to honour the delivery of Wärtsilä’s icebreakers.\textsuperscript{342} This note illustrates how, already in the 1950s, icebreakers had evolved into the showcases of the Finnish-Soviet trade. An icebreaker contract had a very material impact on the wallets of shipbuilding magnates and the living conditions of the socially precarious working class. Icebreakers suited the Finnish national identity as a Northern industrial country, as well as the narrative of Soviet socialist Arctic conquest.\textsuperscript{343} Even though they were not numerous, the icebreakers depicted the national significance of shipbuilding in terms of employment and prestige better than the hundreds of barges and tugs also sold to the Soviet Union.

The truce between Kekkonen and Wahlforss broke during the 1961–1962 presidential campaign when Wahlforss mustered the liberal-minded Finnish elite to support Chancellor of Justice Olavi Honka in order to prevent Kekkonen’s re-election.\textsuperscript{344} When the anti-Kekkonen campaign questioned the position of the sitting president, Kekkonen noted in his diary that

\begin{itemize}
\item \textsuperscript{339} Particularly, Kekkonen criticised Wahlforss for not committing to Paasikivi-line while Wahlfross having an aversion to Kekkonen’s dominance in the Soviet affairs. For example, see \textit{Urho Kekkosen päiväkirjat 1, 1958-1962}, ed. Juhani Suomi (Otava: Helsinki 2001), 138, 147.
\item \textsuperscript{340} Rentola, \textit{Niin kylmää että polttaa}, 1997, 350.
\item \textsuperscript{341} Mikko Majander, \textit{Paasikivi, Kekkonen ja avaruuskoirra}, (Helsinki: Siiltala, 2010), 224-227.
\item \textsuperscript{342} \textit{Urho Kekkosen päiväkirjat 1, 1958-1962}, 2001, 118.
\item \textsuperscript{344} Zilliacus, \textit{Wilhelm Wahlfors}, 1984, 305-307.
\end{itemize}
the Kremlin might decline a contract for the icebreaker that was currently in production, and send Wärtsilä’s commercial representative home from Moscow to display support for Kekkonen: ‘The reason being Wahlforss’s mindless stance in the presidential election’.345

From the point of view of the Soviet Union, the technical and political rationales to buy Wärtsilä’s icebreakers were too multifaceted that the Soviet leaders would have taken upon themselves to decline a contract just to interfere in the dramatic relationship of two headstrong Finns, Wärtsilä and Wahlforss. The relationship between the two directors remained cold until Wahlforss’s death in 1969 but the Wärtsilä Helsinki shipyard eventually completed five Moskva-class polar icebreakers for the Soviet Union during the 1960s. At this point, when the shipyard had already proved its ability to build the conventional polar icebreakers the Soviet Union needed, Wärtsilä’s icebreaker trade did not require technopolitical impetus from the political leaders.

Finnish icebreakers gathered versatile technopolitical connections during the 1950s. Icebreakers remained useful as political tools to show gratification and dissatisfaction with the Finnish government as the Cold War proceeded. The technopolitics of the Finnish-Soviet nuclear icebreaker projects must be evaluated against this background.

3.2. Boarding the ships to modernity and prestige

Nuclear marine propulsion, like other nuclear applications, became an effective instrument to achieve cultural and political goals during the 1950s.346 Being nuclear provided more funding, more stature, and more power compared to non-nuclear technologies, companies, or states.347 Unlike the Scandinavian countries in the post-war years, Finland had no diplomatic opportunities to receive extensive technological help to establish its own nuclear technology program without endangering its fragile neutrality.348 Despite this, Finnish engineers...
breathed the same air as their foreign colleagues and became infected with nuclear enthusiasm.\textsuperscript{349}

The Wärtsilä Helsinki shipyard set up a project to design and build a 50,000 shp nuclear icebreaker, and presented the first sketches to their contact person at Morflot (the USSR Ministry of Merchant Marines) in Moscow in 1961.\textsuperscript{350} The Finnish project shared the vision for harnessing the atom with comparable projects in other countries that had recognised nuclear technology as a means to promote their national security, prestige, and welfare. As a contrast to internationally better known nuclear projects in that period, in Finland the initiative was made by Wärtsilä Helsinki shipyard on its own for reasons that were more related to business strategy than state power.

The lesson of the past hundred years of western European shipbuilding had been that the passage of time was unkind to those who stuck to traditions and sewed sails at the emergence of steam-engines, or opted for steam when combustion engines were introduced. In the 1950s, nuclear-powered propulsion appeared as the next breakthrough in shipbuilding, echoing the previous paradigm shifts. Compared to conventional engines, an on-board nuclear reactor promised travel for longer distances at lower costs at a higher speed.\textsuperscript{351}

At the beginning, nuclear reactors were a luxury that was available exclusively for naval ships such as submarines and aircraft carriers.\textsuperscript{352} In 1958, the Finnish engineers received news of the launch of the first non-naval nuclear ship the \textit{Lenin} in the Soviet Union. She had three Soviet OK-150 type pressured-water reactors providing steam for turbines connected to generators that powered the electrical motors that drove the ship’s propellers. \textit{Lenin} was a considerable feat in the Cold War technology race in the field of peaceful nuclear applications. US President Eisenhower had announced the building of a civilian nuclear ship as a part of his ‘Atom for Peace’ program in 1955 but \textit{NS Savannah} — the first American nuclear-powered merchant ship— was launched only after \textit{Lenin} in 1959.\textsuperscript{353} The nuclear-powered \textit{Savannah} and \textit{Lenin} offered the media highly visible prestigious objects to follow through construction, launch, and service, including all of their extra-curricular appearances.\textsuperscript{354}


\textsuperscript{354} Sonja Schmid, “Shaping the Soviet Experience of the Atomic Age: Nuclear Topics in \textit{Ogonyok},
The technical director of Wärtsilä Helsinki shipyard, Christian Landtman, was struck by the Soviet nuclear icebreaker. Landtman had studied shipbuilding at the Helsinki University of Technology after the war and graduated with a MSc. in Technology in 1948. After graduating, he had been a lecturer in marine machinery while also working at the shipyard. For Landtman, nuclear-electric propulsion seemed to solve particularly conveniently the difficult equation in polar icebreaking between the maximization of the operation range and minimization of the weight of fuel.

Electric transmission from the main power engines to the propeller shaft had become an established solution in modern icebreakers in the 1930s. Electric propulsion enabled machinery to develop full power at low revolutions and thus provided better manoeuvrability in ice. From this perspective, icebreaker Lenin’s nuclear turbo-electric system was not utopian but rather something achievable: a new exciting and potentially practical way to cook water to generate electricity.

The news of Lenin and Savannah coincided with the introduction of nuclear technology in Finland. From 1958 onwards, the International Atomic Energy Agency (IAEA) provided the long-awaited opportunity to obtain nuclear research reactors and fuel through an international, multilateral, and peaceful organisation. When the Helsinki University of Technology started to offer lectures on nuclear physics in 1959, among the students was shipbuilder Landtman. He also visited the construction site of the American NS Savannah and the USCGC Eastwind icebreaker, which were proudly displayed for foreign shipbuilders. In the very small niche of icebreakers, the American feat of engineering struck the Finnish engineer almost as an idle boast. Indeed, in a time of technological optimism, a nuclear icebreaker seemed an attainable trophy for the young shipbuilding engineer and a shipyard with a large design office and solid self-confidence.

It was neither the icebreaker nor the nuclear propulsion alone that aroused such strong ambitions at the Helsinki shipyard, but the combination of these two. For icebreaker designers, a nuclear-powered polar icebreaker was technologically too sweet not to be realised. Compared to the 22 000 shp diesel-powered icebreaker Moskva, which used 110 tons of diesel daily and required monthly refuelling, the reactors of the Lenin were able to produce almost twice as much power for a non-stop, year-long journey. The long operational range and the

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355 Michelsen, Valtio, teknologia ja tutkimus, 1993, 187–192;
lightness of fuel advocated in favour of nuclear reactors. The ice-strengthened hulls made polar icebreakers suitable to accommodate nuclear power plants on board.\textsuperscript{358}

The Wärtsilä Helsinki shipyard publicised its aim to build a nuclear icebreaker in 1961. At that time, thanks to the multilateral cooperation on nuclear issues within the IAEA, the nuclear propulsion was no longer too strategic to endanger Finland’s aim to avoid the military connotations of nuclear technology. However, it was certainly striking enough to give the shipyard prestige.\textsuperscript{359} A nuclear icebreaker—even if it only existed as a drawing on a paper—was an asset.

The managers of the Wärtsilä Helsinki shipyard presented the tentative project idea of a nuclear icebreaker to their contact person in Morflot, the USSR Ministry of Merchant Marines, in Moscow.\textsuperscript{360} Morflot, the principal operator of the Soviet Arctic fleet, had little against new, well-functioning icebreakers, but it did not make the payments or the final decisions. As an exceptional and undoubtedly expensive project proposal, the Finnish nuclear icebreaker needed to be politically valuable enough to override other conventional ship orders within the Gosplan’s priorities. To that end, being nuclear and an icebreaker was simply not enough. After all, with the \textit{Lenin} the Soviet shipbuilders had already demonstrated their domestic capability. What the Finnish project could offer, though, was a channel to western technology. After the first contacts, the Soviet foreign trade strategists expressed their interest in ordering a nuclear icebreaker on the condition that it would have western reactors.\textsuperscript{361}

Wärtsilä sent enquires about marine nuclear propulsion systems to all possible western producers in 1964/1965. Whereas the American Westinghouse and some West German companies refused to discuss selling a marine reactor to the Soviet Union, the UK, Sweden and France seemed responsive, and even enthusiastic.\textsuperscript{362}

The British Foreign Office learned about the Finnish project by accident in the summer of 1964. The Parliamentary Secretary had heard about Mitchell Engineering Ltd. receiving an order for a marine reactor and inquired if there were any restrictions on exporting nuclear technology. Deliberately or not, he missed out the quite significant detail that the British

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reactor would be re-exported to the Soviet Union. The Ministry of Trade received the Finnish bid for tenders as a great export opportunity for the British engineering industry to develop marine reactor technology. Mitchell Engineering confidently expressed: ‘We feel that if the British Government will grant export permission for this type of nuclear machinery installation then we have a very good opportunity of receiving an attractive export order’.

Nevertheless, the British Commercial Counsellor in Helsinki understood instantly that the Finns themselves had no use for a nuclear icebreaker on the Baltic Sea. He contacted the only icebreaker builder in Finland, Wärtsilä Helsinki shipyard and its director Landtman. Landtman did not try to conceal that his shipyard had sent the requests: ‘He was convinced that polar icebreakers of the future would be nuclear powered – indeed, that nuclear propulsion and icebreakers were made for each other [...] Their only potential customer for nuclear-powered icebreaker was, however, considered to be the Soviet Union.

In the UK, exporting a nuclear reactor to the neutral country was an opportunity to boost trade and national prestige as a nuclear power. Delivering nuclear technology to the Soviet Union turned the attention to nuclear safeguarding questions. However, even now the correspondence between the British civil servants did not present the trade embargo as an insurmountable obstacle: ‘That the ultimate destination is known to be the U.S.S.R. does not make things easier, but since the whole question of exports to the Eastern bloc is under reconsideration, it is just conceivable that, with suitable safeguards, permission for such a re-export might be permitted’.

The British-Finnish reactor trade did not materialise in the end but primarily because of the inexperience of the producer. Wärtsilä did not want to accept an experimental system. The Swedish electrical engineering company ASEA, which had a major role in building Swedish nuclear power plants but did not yet have an appropriate and tested marine reactor ready, was rejected for the same reason.

Thus, France was the only remaining possibility for the Helsinki shipyard to get a western reactor. When the Finnish Atom Advisory Board, a governmental body, travelled to visit the French Atom Energy Commission in 1965, they invited Landtman, a representative of a private company, to join them. The Finnish request for a marine nuclear reactor received positive feedback but no direct approval until the end of the 1960s.

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368 Minutes of Finnish Atom Energy Advisor Board meeting 8/65 29.10.1965, Ca2, KTM, NA.
From the beginning of the 1960s until the late 1970s, the Finnish nuclear icebreaker was little more than just a fascinating idea and some technical drawings used to test the Soviet interests and the permeability of the Iron Curtain. Although the East-West transfer of nuclear technology was a sensitive topic, the project was not a secret. On the contrary, the project was occasionally brought up as a striking example of Finnish technological development.\footnote{Report on Atom energy and Finland by Erkki Laurila 1.11.1965, Ma1, KTM, NA; Landtman, “Technische Gesichtspunkte über modern grosse Eisbrecher,” 1961.} The Finnish Atom Energy Advisory Board even kept the US nuclear technology administration updated.\footnote{Finnish Atom energy advisor board, minutes of meeting with American civil servants at the US Atom Energy Commission in Washington 13.9.1965, Ma1, KTM, NA.}

While the French were pondering their response, the Soviet Union abandoned the idea of Western acquisition and opted to use Soviet reactor technology for its nuclear fleet. Between 1967 and 1977, the archival collections remain silent. The absence of documentation suggests the suspension of the Finnish nuclear icebreaker project. Ironically, this decade of idleness coincided with some other developments that generally increased the role of nuclear technology in Finnish-Soviet negotiations.

In 1967, the recently founded Finnish-Soviet Economic Commission set up a bilateral working group for nuclear cooperation. In particular, the Soviet Union was eager to direct the cooperation towards the procurement of the first Finnish nuclear power plant. In Finland, the state electricity company had already begun accepting bids for the nuclear power plant from western companies. Considering the technical and political risks of a Soviet nuclear reactor, the Finnish side tried to evade the topic and to concentrate on other, less problematic alternatives.\footnote{Michelsen & Särkikoski, Suomalainen ydinvoimalaitos, 2005; Tuomo Särkikoski, Rauhan atomi, sodan koodi, 2011; Milka Sunell, Miten Suomen yksityinen metsäteollisuus hankki länsimaisen ydinvoimalan, 2011.} To this end, the Finnish members of the committee proposed the nuclear icebreaker project as a way of showing Finnish willingness to cooperate. Yet, as the chair of the working group reported, Wärtsilä was no longer interested in the project.\footnote{Records of atom energy working group meetings 1/67 7.8 and 2/67 18.8.1967, KTM Hd3, KA.}

In economic terms, Wärtsilä did not need the contract. By then the Helsinki shipyard had already established its role as a purveyor of conventionally powered icebreakers for the Soviet Union. During this decade when the nuclear icebreaker project was on pause, the Helsinki shipyard kept itself busy building seven polar icebreakers and five smaller river and harbour icebreakers for the Soviet Union.

The Soviet interests in nuclear polar icebreakers had not disappeared, on the contrary. In 1970 at the latest, the Helsinki shipyard became aware of the new Soviet nuclear icebreaker project;
the ‘Arktika’-class had an astonishing 70,000 shp. After the Soviet technology strategy focused on domestic nuclear development, there were no longer enough technopolitical reasons to use Finnish contract as a channel for western nuclear technology and to allow a Finnish shipyard get the honour of building a nuclear flagship for the Soviet Arctic fleet.

The Finnish nuclear icebreakers project did not proceed in the late 1960s because it was not valuable enough for the shipyard or its customer. The Finnish international position between east and west limited and —occasionally— facilitated the project as the restrictions for technology transfer made the Finnish shipyards useful as intermediators. During this phase of the Finnish nuclear icebreaker project, however, it remained as an endeavour of a private Finnish enterprise.

3.3. Re-constructing a technopolitical symbiosis, 1975–1976

The 1970s ushered in a new era in the relationship between Wärtsilä’s icebreaker business and the state. During this decade, Wärtsilä’s conventional icebreakers rose towards their technopolitical zenith. Interaction between the private company and the Finnish political leadership evolved into an almost symbiotic relationship, in which icebreakers functioned as technological instruments to realise political goals in the Soviet trade but also in the western relations.

Wahlfors retired from the operational management in 1961 at the age of 70 but controlled Wärtsilä’s big business and Soviet trade until his death in 1969. Wahlfors wanted the director of Wärtsilä’s shipbuilding Christian Landtman to take over the management of the Wärtsilä corporate group. Landtman was a principled shipbuilder who had clearly found his calling at the technical side of the business. He gave Wahlfors credit for his competence in business while also expressed frustration about his faults in engineering. Landtman had no interest in following Wahlfors as the director of Wärtsilä group. To compromise with Wahlfors regarding his career, Landtman suggested that Wärtsilä would nominate a director whose greatest expertise was not technical but political networking.

Tankmar Horn (1924–2018) was an ideal candidate for this purpose. Horn held a Master’s degree in economics and business, and had had a successful career in the Ministry for Foreign Affairs. As a former diplomat and director of the Foreign Trade Department of the Ministry for Foreign Affairs, he had unproblematic and close networks with the Finnish foreign policy

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administration and President Kekkonen. He did not hesitate to use his connections for the company’s benefit.375

Horn became Wärtsilä’s deputy director in 1969 and a year later he replaced Bertel Långhelm as Wärtsilä’s director. ‘Horn brought a new dimension to Wärtsilä,’ as Landtman noted in his memoirs, ‘he repaired our relations with the Finnish state.’ Horn participated in negotiations conducted at the political level of the Soviet hierarchy, but unlike Wahlforss, he seldom interfered in technical details.376

In Finland, state-owned icebreakers were already an unquestioned part of the national infrastructure system, but the icebreaker fleet was only able to open southern winter harbours. Thanks to research and development activities at the shipyard, eliminating the seasonal variation in Finnish shipping was no longer a technical problem for the shipyard but rather a political question of the allocation of public money. Kekkonen had well-known interests in the industrialisation of northern parts of Finland, and provided a political impetus that together with other economic and regional factors made the Finnish Parliament appropriate funds for two new icebreakers.377 When the Wärtsilä Helsinki shipyard commissioned its next-generation icebreaker in 1975, no one was surprised to learn the ship was named Urho after Kekkonen.

IB Urho was a modern and powerful icebreaker with 16.2 MW of shaft power, a heeling pump mechanism preventing the vessel from getting stuck in ice, a refined hull-structure cultivated through model-scale trials, and a bridge with 360 degree visibility. These technical features made Urho and her sister ships invaluable instruments to support economic activity in northern Finland.378 For other technopolitical purposes, the icebreaker Urho was also equipped with a comfortable cabin that could accommodate high-class social gatherings. Together, the two Urhos, president and icebreaker, promoted Finnish technological competence in international relations.

In 1975, Helsinki hosted the historical Conference on Security and Cooperation in Europe (CSCE, Euroopan Turvallisuus ja yhteistyökonferenssi, ETYK). The meeting brought the superpower leaders to the same negotiation table, human rights onto the international agenda,


378 The Urho had a sister-ship in Finland, the Sisu (1976), and three in Sweden, where it was known as “Atle-class”: Atle(1974), Frej(1975), and Ymer(1977).
and little Finland under the spotlights of the international press. It was a brilliant feat for Finland and Kekkonen to get superpower leaders to board planes and fly to Helsinki because it allowed the country to define itself as a bridge-builder between confronting powers. It was not insignificant either to get President Ford on board the IB Urho because it provided a possibility to promote Finland as a technologically advanced modern country. For Wärtsilä, the presence of the American president and the members of his entourage on IB Urho and the publicity it received in the American press was a breakthrough in its marketing efforts. The company had been trying to sell an icebreaker to the US Coast Guard since the 1960s but in vain.\footnote{Minutes of the visit of foreign Minister Dean Rusk to foreign minister Ahti Karjalainen 1.6.1966, f. Vuosikirja 1966, UKA.}

President Ford was neither innocent nor ignorant about the underlying technopolitical implications when he accepted the invitation to visit Urho to enjoy refreshments. From the early spring of 1975, the US State Department had sought a way to discreetly strengthen Finland’s economic independence- and western orientation without hampering its attempts at neutrality. The idea of the icebreaker-visit was a brainchild of the US Ambassador Mark Austad who had arrived in Helsinki only a couple of months before, in March 1975. He had immediately recognized the Finnish icebreakers as technological artefacts that would address both the US diplomatic aims in Finland as well as domestic regional policy in the Great Lakes.\footnote{PM for Lieutenant General Brent Scowcroft, DoS 25.2.1975 on the call on President Ford by Ambassador to Finland Mark Austad; PM for Secretary Kissinger on letters to the President from Ambassador Austad, 6.6.1975, National Security Adviser (NSA), country files Finland 1973, box 7, GFA.} On May 2nd, the Ambassador wrote to President Ford and proposed Finnish icebreakers as a technopolitical tool that would enable the US to solve two problems at once: ‘[The Finns] desperately need economic encouragement. We desperately need icebreakers. More important than the economics is the ability to give them financial strength and less economic dependence upon the Soviet Union’.\footnote{Ambassador Austad to President Ford, 2.5.1975, National Security Adviser (NSA), country files Finland 1973, box 7, Gerald Ford Archive (GFA).}
The US Department of State recommended the US Coast Guard to purchase one or more icebreakers from Finland. The rationale was to signal ‘to Kekkonen, his government and the Finnish people that the US not only understands Finland’s present difficulties, but is willing to do something concrete to alleviate them.’ Through this, the State Department sough to provide ‘a strong psychological boost to those forces in Finland who are striking against some odds to maintain the Western orientation of Finnish foreign trade’. At the same time, the icebreaker trade would decrease ‘Finnish criticism of the imbalance in the US-Finnish bilateral trade’. All these technological and political interests were all at stake when the American delegation arrived in Helsinki and President Ford—as Seaway, a Great Lakes navigation magazine put it—‘went shopping for an icebreaker’.

A year after the CSCE conference, President Kekkonen travelled to Washington. At his meeting with US Secretary of Transportation William T. Coleman, Kekkonen opened the discussion by explaining that his state visit to the USA had two primary purposes. One was to contribute his salutations to the US bicentennial celebration. The other one was to address certain economic questions, namely the possibility of selling a Finnish icebreaker to the USCG.

Indeed, when the President of Finland met the American leader at the height of the Cold War, they spoke about icebreakers and not even in the metaphorical sense. The Finnish press concentrated its reporting on Kekkonen’s role as the ‘super-salesman’ of Finnish icebreakers.

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384 Memorandum of conversation between Kekkonen, Sorsa, Coleman, Austad, 4.8.1976, NSA Finland, box 7, GFA.
The journalists applauded when they learned that as a result of Kekkonen’s conversation with Ford, Secretary of State Henry Kissinger had picked up a phone to call Secretary of Transportation Coleman to underline that the Finnish icebreakers were a political priority. Thanks to this conversation, Austad announced to the Finnish daily newspaper *Helsingin Sanomat* that Wärtsilä could now make an offer for four 2500 shp icebreakers for the USCG.385

So overwhelming was the national ecstasy in Finland at the possibility to deliver an icebreaker to the country of technological supremacy that it took a while before the press noticed that 2500 shp icebreaker was not a huge Urho-class icebreaker but rather a small harbour tug.386

Ultimately, Wärtsilä never succeeded in selling a ship to the US. Despite all these and coming efforts, the diplomatic rationale in the White House was not enough to override the domestic opposition against foreign technological purchases. This did not mean that the efforts of the Finnish American governments to promote Finnish icebreakers had been in vain. President Kekkonen strengthened his position in Finland. Wärtsilä gained international visibility as a builder of sophisticated vessels. The US government managed to show its support to Finland without endangering the Cold War balance of power. As Austad concluded in his letter to the Special Advisor to President, Brent Scowcroft, the attention the US had devoted to Finland had increased Finnish leverage in relation to the Soviet Union: “There is no question in my mind, the more attention we pay to them, the more respect they get from the east.”387

When the Wärtsilä Helsinki shipyard re-launched its nuclear icebreaker project in 1977, it was inscribed with the same technopolitical meanings and functions as the American-Finnish icebreaker endeavour. Icebreakers in intergovernmental relations had become instrument for breaking the ice and opening up new connections between countries.

### 3.4. Relaunching a nuclear ship of Finnish-Soviet cooperation, 1977–1984

In 1977, the Wärtsilä, the shipyard’s personnel magazine, published a special issue in celebration of the sixtieth anniversary of Finnish independence and the Russian Revolution, building a connection between these two historical events and their critical influence on the success of the Finnish shipbuilding. Finnish Foreign Minister Paavo Väyrynen, chair of the Economic Commission Ahti Karjalainen, and the Soviet commercial representative in Helsinki M. V. Gubanov all contributed to the issue by praising Wärtsilä’s open-minded and

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387 Mark Austad to Special assistant to the President Brent Scowcroft 16.9.1976, NSA Finland, box 7, GFA.
unprejudiced activity in developing the relationship between Finland and the Soviet Union.388 The next special issue in 1978 commemorated the thirtieth anniversary of the Finnish-Soviet treaty of friendship, cooperation, and mutual assistance. While not directly stating that Wärtsilä’s ship trade was thanks to the security pact, the issue underlined that during the term of the treaty, Wärtsilä had, on average, delivered a ship per month to the Soviet Union.389 The special issues stood out from the overall journalistic content of the magazine that typically concentrated on internal organisation news and recreational activities. That these high-ranking political figures made it their business to contribute to the personnel magazine of a commercial company illustrates the intermingled political and economic interests in the Finnish-Soviet ship trade. A considerable share of the company’s profit came from the Soviet Union. If they did not stem directly from the state-level agreement on ‘friendship, cooperation and mutual assistance,’ the good Finnish-Soviet relationship constituted an essential precondition for the successful trade. The corporation understood the value of making itself an actor in the friendship between the states, even if it was mainly rhetorical. The 1977 - 1978 resurrection of the nuclear icebreaker project stemmed from the same source.

Rather paradoxically, the Helsinki shipyard brought the old nuclear icebreaker project to the negotiation table at a time when the western audience became critical of nuclear projects.

In the Western world, the peaceful applications of atom energy had failed to meet expectations. Post-war nuclear enthusiasm faded into realism. Project after project proved that nuclear propulsion was still more expensive and risky in merchant shipping in comparison to combustion engines.390 Nuclear icebreakers were partly saved from public criticism by their function as government-maintained service ships operating far away. As Landtman argued to an international conference audience in 1983:

*It is also expected that the use of nuclear power in remote areas like the Arctic will not meet with such severe criticism as in densely populated areas. The extreme strong construction of the icebreakers reduces the risk of radiation leaks occurring in the case of collision. Further, it is not necessary for these icebreakers to go into harbours or densely built-up areas. Although nuclear propulsion will probably not be an overall solution in icebreaking ships, it will have potential in certain applications, especially in high-powered Arctic ships.*391

In the late 1970s, the Wärtsilä’s nuclear icebreaker project was still essentially the same as ten years earlier, but now the technopolitical needs of the Finnish-Soviet relationship were

388 Wärtsilä personell magazine, special issue 1977.
389 Wärtsilä personell magazine 2/78.
different. In the new situation, the re-introduced project became a highly appropriate remedy for new problems.

The Soviet organisations had started to prioritise the import of knowledge over the import of machinery alone, and the export of refined goods over the export of raw materials alone. The Finnish representatives in the Economic Commission heard increasing complaints about the reluctance of the Finnish companies to buy Soviet machinery and technology.392

The asymmetry of the Finnish-Soviet trade exchange—Finland exporting technology and importing raw materials—had been in the background throughout the bilateral Cold War trade. What appeared as novel in the late 1970s was the increasing emphasis on the Soviet national prestige. The technology export had not only economic value to the Soviet foreign trade negotiators, but the machine exports should also demonstrate the technological prowess of socialism. The Soviet Union, a nuclear power, did not want to be perceived as a backward raw material producer but as a technological pioneer. These aspirations had a few immediate effects on the Finnish-Soviet trade structure, but it made innovative technology projects politically invaluable.393

Aims to cultivate the political relationship and balance the bilateral trade exchange motivated governmentally pushed parade projects, such as the procurements of a nuclear power plant and electric locomotives from the Soviet Union. Yet any pathologically alert Western observer would notice that these major public projects compromised the separation of politics and business in the Finnish-Soviet affairs. Finnish diplomats treasured the image of a distinction between foreign affairs and economic spheres, but the fact that the state leaders worked for technology projects that increased dependency on the Soviet Union demonstrated the embarrassing level of Soviet influence in Finland.394 The government-driven Finnish-Soviet cooperation projects to buy Soviet goodwill, then, came with a price and hampered the Finnish neutrality.

In the shipbuilding industry, these attempts to increase Finnish-Soviet cooperation brought about 'counter-purchases', a type of industrial cooperation that is examined more closely in Chapter 4. Counter-purchases referred to a certain percentage of Soviet content in the ships the Soviet Union had ordered from Finland. The Soviet negotiators were particularly eager to include in these counter-purchases the main diesel engines which were easily the single most

392 Records from the meeting of the Finnish-Soviet Economic Commission 1974-1978, KTM Hsa:12, KA.
valuable part of a ship. Most of the Finnish executives were equally eager to reject these suggestions, because the Soviet diesels would compete against their own engine production. Although neither the Soviet Union nor the Finnish government could force private enterprises to buy components they did not want, the Finnish shipyards realised that in order to maintain their good reputation in the Soviet foreign trade, they had to give the Soviets something in response.395

Within the context of these underlying trends, Wärtsilä proposed its nuclear icebreaker project to the Finnish-Soviet Scientific and Technical Cooperation Committee as a potential scientific and technical cooperation project in the spring of 1977. The suggestion resonated with the shipbuilding engineers and foreign trade politicians. It provided a convenient way to express willingness to cooperate while escaping Soviet suggestions for replacing Finnish diesel engines with Soviet machinery or building joint nuclear power plants in third countries.396

According to the proposal, the Helsinki shipyard would take the principal responsibility for designing and building a nuclear icebreaker, but the nuclear reactors would be built and installed in the Soviet Union. The combination of the Finnish icebreaker expertise and the Soviet nuclear technology had genuine technical justifications as well as definite financial rationales. Wärtsilä had never planned to develop its own reactor technology. Outfitting an icebreaker with Soviet reactors was hardly a sacrifice but a creative response to the Soviet demands.

At this stage, promoting the nuclear icebreaker project resembled more political lobbying than technical marketing. The efforts focused on persuading high-up political decision-makers in the Soviet Union to order a nuclear icebreaker from Finland.397 In December 1978, Kekkonen returned from his state visit to the Soviet Union with the piece of information that Morflot would like to include two nuclear-powered icebreakers in the next five-year protocol of bilateral trade (1981-85).398 Tankmar Horn received further confirmation in 1980 when he joined Kekkonen on his state visit to the Soviet Union. The official co-operation agreement on

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396 From T. Horn to P. Rantanen 18.9.1979; memorandum from T. Horn to N.S Patolitshev, to Guzhenko (Morflot) and to Kovaljov (GKNT) on the Soviet-Finnish cooperation project of new nuclear polar icebreakers 3.11.1978, f. 168, signum 58 B1, UMA; Meeting of Finnish-Soviet Economic Commission 22.2.1978; KTM Had:12, NA.
397 From T. Horn (CEO Wärtsilä) to P. Rantanen (Finnish Ministry of Foreign Affairs) 18.9.1979; A memorandum from T. Horn to N.S Patolitshev (Soviet Ministry of Foreign Trade), to Guzhenko (Morflot) and to Kovaljov (GKNT) on the Soviet-Finnish cooperation project of new nuclear polar icebreakers 3.11.1978, f. 168, signum 58 B1, UMA.
the Finnish-Soviet nuclear icebreaker project in November 1980 was a clear breakthrough in the decades-long process.

As Horn described afterwards in his overwhelmingly grateful letter to the President:

*Nationally important economic and commercial issues were agreed at a high hierarchical level that guarantees that their completion will take place as scheduled. It was encouraging to witness how Mr President’s determined, far-reaching decades of work on relations with the Soviet leadership is still bearing fruits [...]. The task given to Wärtsilä of developing a nuclear icebreaker together with Soviet organisations is one tangible result of Mr President’s visit to the Soviet Union.*

The trip to Moscow was to be the last for the aging President Kekkonen, who was transforming from an active salesman into a figurehead of the Finnish–Soviet friendship. However, the momentum of the Finnish Cold War shipbuilding system was already so strong that the established technopolitical meanings and practices propelled the nuclear icebreaker project forward without presidential impetus.

For the Soviet negotiators, the highest possible proportion of Soviet technology in the nuclear icebreaker was an imperative. In addition to the nuclear reactors, the Soviet Union wanted to deliver special low-temperature steel developed originally for its submarines, as well as turbines and propellers. These components and materials together raised the Soviet share of the project up to thirteen percent. The thirteen percent was enough to reframe the old Finnish nuclear icebreaker project as a prime example of Finnish-Soviet scientific, technical and industrial cooperation.

In 1982, Wärtsilä organised a big celebration in Moscow to commemorate the fiftieth anniversary of its ship trade with the Soviet Union. In his speech, the deputy Minister of Foreign Trade Aleksei Manzhulo presented Wärtsilä as the prime example of the fruitful Finnish-Soviet cooperation between Finnish corporations and Soviet customers. The nuclear icebreaker project, as the showcase of this cooperation that materialised mutual benefits, was given a special mention.

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400 Wärtsilä personell magazine 6/82
The three propellers of the Taymyr were made in the Soviet Union with Japanese Toshiba machine tools that should not have been in the Soviet Union based on COCOM regulations, as recalled by the Finnish shipbuilding engineers. (Niini 16.4.2014; Saarikangas 5.2.2014; Jaatinen 5.6.2016). Photo: Aker Arctic Inc.

A technically pivotal alteration to differentiate the cooperation project from the Soviet nuclear icebreaker was to specify the project as a shallow-draft nuclear icebreaker. The giant Arktika-class icebreakers of the Soviet nuclear fleet were strong and powerful enough to penetrate anywhere in the Arctic Ocean except for the shallow coastal waters due to their deep draft. The year-round shipping of minerals and hydrocarbons by the Yenisei River and on the Kara Sea required strong icebreakers able to operate at a depth of less than nine metres. Wärtsilä had experience in the design of an icebreaker that could break thick ice and could almost be navigated ‘in morning dew’, as demonstrated in concurrent river icebreaker projects.


404 Aker Arctic Ship references. <www.akerarctic.fi>
Kapitan Evdokimov (1983) had a draught of only 2.5 meters and so it demonstrated Wärtsilä’s capability of designing shallow-draft icebreakers. Wärtsilä Helsinki shipyard built the eight ships of this class to operate in the Siberian rivers. Photo: Aker Arctic Inc.

Finally, in the festive week of the October Revolution in 1984, the Soviet buyer finally agreed to sign the order for two shallow-draft nuclear icebreakers. A quarter-century after the initiation of the Finnish nuclear icebreaker project, it succeeded in aligning with all of major political, technological and commercial interests.

3.5. Technopolitics of alleged state-industry demarcation, 1986–1987

The retirement of President Kekkonen in 1982 after his 25 years in office could have been a turning point in the technopolitics of the Finnish-Soviet relations. Particularly those who admired Kekkonen’s authoritarian style and habit of getting personally involved in all aspects of Finnish-Soviet cooperation, and using political influence to override bureaucratic constraints if needed, criticised Kekkonen’s successor Mauno Koivisto (1923–2017, in office 1982–1994) for being passive.

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406 Juri Piskulov and Esa Seppänen even use a concept of "Kekkosenergy," a president who is all the time in control and feeding into the government, administration, and industry, thus nurturing the relationships. Juri Piskulov, Nääin teimme idänkauppaa (Helsinki: Ajatus-kirjat 2011), 271; Seppänen, Idänkaupan isäntä (Helsinki-kirjat, 2011), 266-277; Juhani Suomi, Epävarmuuden vuodet. Mauno
Koivisto’s presidency initially marked merely a change in style rather than in doctrines in Finnish-Soviet ship trade. Kekkonen had enjoyed casual interaction with foreign political leaders and members of the industrial elite to the extent that the imaginary of the Finnish-Soviet trade sometimes resembles an obscure catalogue of outdoor activities. Koivisto kept his distance from the industrial elite; instead of hunting and fishing with industrial tycoons, he engaged in a rather active personal correspondence with foreign political leaders. An incident related to two submarines provides an illustrative example of Koivisto’s personal style in handling the technopolitics of Finnish Cold War shipbuilding in the 1980s.

Rauma-Repola had contracted to build self-propelled submersibles for the USSR Academy of Science. It was not the first contract for deep-sea research vessels the Soviet Union had acquired from the West; in the 1970s, Canadian and Swiss companies had delivered to the Soviet Academy of Science submersibles diving down to 2000 metres. At the turn of the 1980s, the Academy had also tried to buy submersibles that could take the pressure of 6000 metres below the sea level from several Western countries including Canada, Switzerland, Sweden, and Japan. Only after these other countries had declined due to political or technical reasons did the Soviets turn to Finland.

The Americans originally approved Rauma-Repola’s project, apparently not quite believing that a Finnish company without much experience in submarines could construct such an unprecedented vessel. Instead of the conventional welded titanium plates, Rauma-Repola opted to use maraging steel alloy, cast and machined into two hemispheres to gain a higher weight-strength ratio. At the point when the Finnish solution started to show feasibility, the US state agents began to pressure the company and the Finnish state to cancel the project. 407

The American concerns over the Finnish submersible project were brought to President Koivisto’s attention through the private channel when the vice-president of the United States George Bush wrote to Koivisto: ‘I have been informed that the Finnish firm Rauma-Repola has undertaken a sensitive high technology project that, if completed as it is now planned, could pose a serious threat to global security. I know your strong personal commitment to peace and stability and I am sure Finland shares our interest in not allowing such a threat to occur.’ 408

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408 George Bush to Mauno Koivisto 29.5.1986, Koivisto 33, NA.
Koivisto engaged in discussions and compromise between Rauma-Repola and US diplomats.\(^{409}\) In his private response to Bush, he ensured that Finland had no intention to cause problems for global security, but continued the letter in a fashion that underlined the alleged separation of private commerce and state politics in the Finnish-Soviet trade:

"Our immediate concern must be Finland’s own security, which among other things requires that Finland maintains its role and position as a neutral country, reliable and true to its international commitments, open for cooperation and exchange with all countries. I am sure that contract clauses regarding for example the non-transfer of sensitive technologies originating in any foreign country are scrupulously respected by all those concerned in Finland. At the same time, it is evident that our government cannot restrain Finnish firms in their trade with products of high technology which have been created in our own country. [...] It is legally not possible for the Finnish Government to interfere with its [Rauma-Repola’s] plans regarding manufacture and sales of its own products. When Rauma-Repola informed me the first time about the matter I noted that if the Finnish Government had any competence on this question, which it does not have, the government should in my opinion encourage the company to act in accordance with good business practice and fulfil its contracts.\(^{410}\)"

After implying that the US measures against Finnish companies would only make Americans themselves guilty of violating Finland’s sovereignty and principles of free trade, Koivisto invoked the moral aspect of the affair: ‘Finland has sometimes been held up as a warning

\(^{409}\) Notes from Koivisto’s discussion with avs Åke Wihtol 4.6.1987, Koivisto 33, NA.

\(^{410}\) Koivisto to Bush 8.8.1986, Koivisto 31, NA.
through talk of “Finlandisation”: now there seems to be an attempt to show that those who are small should also be humble’. 411

The incident ended with a compromise. Rauma-Repola agreed not to deliver any further deep-sea submersibles to the Warsaw Pact countries while the US restrained from sanctions. 412 In Finland, the case has been narrated as the prime example of the Cold War restrictions to the East-West trade that prevented an innovative Finnish company from entering into promising business. The assumed rationales behind the USA’s use of state power against a private company in a neutral country have ranged from technological jealousy to concerns over American underwater sound surveillance systems. 413

The American archival collections remaining classified, educated guesses without new primary sources provide only a little explanatory power. Statistically, these two submersibles, named afterwards Mir-1 and Mir-2, were exceptions among the over 1500 vessels Finland sold to the Soviet Union without CoCom interventions. Nevertheless, this incident illustrated Koivisto’s style as the head of state supporting domestic shipbuilding in international arenas.

Politically, Koivisto enjoyed wide support from those who longed for a parliamentarian turn after Kekkonen’s governance. Unlike Kekkonen at the beginning of his tenure, Koivisto did not need to personally engage in Soviet trade promotion to convince the financial elite of the benefits of good Soviet relations. As a former Central Bank director, Koivisto’s interest in economic policy focused more on structures and institutions facilitating ship exports instead of specific projects.

However, Koivisto followed his predecessors in how he invoked the alleged demarcation between the state and the private industry. In foreign affairs, Finland continued to be realist, but in economic and technological issues, the room for manoeuvre was not as strictly constrained. As the correspondence on Rauma-Repola’s submersibles demonstrated, Koivisto applied America’s own arguments against itself, refusing to accommodate US security concerns while giving an impression of cooperation. The Cold War straitjacket forced the small country to be pragmatic in its international relations, but innovative ship contracts provided the nation an appropriate way to show off its prowess and not to be humble.

411 Koivisto to Bush 8.8.1986, Koivisto 31, NA.

In 1988, Finnish and Soviet leaders manifested their Cold War bond by commemorating the fortieth anniversary of the Finnish-Soviet Treaty on Friendship, Cooperation and Mutual Assistance. The Finnish private shipbuilding industry participated in the celebrations of the state-level friendship as the first Finnish-made nuclear icebreaker was ceremoniously named *Taymyr* after an old imperial Russian icebreaking steamer and the northernmost part of the Eurasian mainland.

When NS *Taymyr* steamed to the Soviet Union, Wärtsilä Marine (Wärtsilä’s newly organised subsidiary for shipbuilding operations) was in severe financial troubles and in dire need of new profitable orders. Wärtsilä had longstanding networks in Moscow but now shrinking resources, loosening up of political coordination, and increasing number of western competitors began to hamper the Finnish-Soviet ship business in a new way.\(^{414}\)

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In the tight economic situation, the shipyard needed a project that would be too tempting for the Soviet buyer to reject or to bargain down, or too easy for other Western competitors to win. The political, economic and technical exceptionalism expressed in the nuclear twins *Taymyr* and *Vaigach* seemed to make nuclear icebreakers into suitable lifeboats for the struggling shipyard. Politically, this high-technology cooperation was just what the Soviets had kept requesting. In economic terms, the profitability of the Taymyr-class contrasted starkly with the shipyard’s other projects. A strategic service ship without a clear market price was a flexible object in political negotiations and opened up the possibility of a wider profit margin and overriding economic restrictions in the Soviet Union. Moreover, it had no Western competitors. Wärtsilä’s Soviet trade representative Lars Jakobsson discussed ship financing with Soviet officials in 1988, and noted in his memorandum that without bilateralism, the

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415 Minutes from meeting in MVT 23.12.1987, Collection of Wärtsilä Marine (WM) 29, ELKA; Gosplan 3.3.1988, WM 30, ELKA.
Soviet Union would always find better credit schemes from other Western countries: ‘as a result only exceptional vessels such the 3rd Taymyr will be ordered from Finland’.416

Pekka Laine, the newly appointed CEO of Wärtsilä Marine, quickly realised the persuasive power of nuclear exceptionalism. As his company fell deeper into a liquidity crisis, Laine translated the nuclear icebreaker project from beneficial to its business strategy into imperative for its survival.417 Discussion of the continuity of the Finnish-Soviet nuclear icebreaker cooperation started in 1987. The prime alternative was a third Taymyr-class icebreaker. The ‘new generation Taymyr’ or ‘T3’ would replace the two previous ones during their maintenance breaks, and involve even more cross-border collaboration418

The vast number of visits and the list of persons involved in the negotiations indicated the great significance of this nuclear icebreaker proposal. In December 1987 alone, Wärtsilä’s negotiators had audiences with every Soviet organisation that were in any way involved in the ship import from Finland, from the end-user organisation Morflot to the Kremlin.419 Several respective informants confirmed that the Soviet Northern Fleet was truly in need of a third shallow-draft nuclear icebreaker to replace Taymyr and Vaygach during their temporary shutdowns and it would be ordered in the near future.420

However, further discussions with the Soviets had also brought to light more contested points of view. The reorganisation of the Soviet economy had diminished the power of central coordination and made Morflot financially more independent from the government. Expected to be self-sufficient, Morflot had to evaluate new ship purchases in a restricted economic framework.421

As they had done previously in deadlock situations, the Wärtsilä and its shipbuilding subsidiary tried to push the project forward through political channels. CEO Laine requested assistance from the Finnish Minister of Trade and Industry Ilkka Suominen, who invited the Soviet Shipbuilding Minister Volmer to discuss Finnish-Soviet cooperation in shipbuilding.422

416 PM WM/L. Jakobsson 17.3.1988 on meeting with Pugin and Litov, WM 30, ELKA.
418 L. Jakobsson to Pekka Laine 10.11.1987; Minutes from meeting in MVT 27.12.1987; Minutes from a meeting in Gosplan 28.12.1987, WM 29, ELKA.
419 Minutes from meeting in MVT 17.12.1987; meeting in MVT 27.12.87; meeting in Gosplan 28.12.1987; meeting in Kremlin 22.12.1987 and on meeting at Wärtsilä’s office in Moscow 22.12.1987; WM 29, ELKA.
420 WM’s internal memorandum 6.5.1988, WM 29; Minutes from meeting in the Wärtsilä office in Moscow 28.12.1987 and in Kremlin 22.12.1987, WM 29; Minutes from meeting in Gosplan 3.3.1988, WM 30, ELKA.
422 Memorandum from lunch meeting between Pugin and L. Jakobsson 12.1.1988; Minutes from
Expectations were positive. In November 1988, the Soviet Deputy Minister of Shipbuilding articulated that the “T3” was ‘95-percent guaranteed’. Later, the Helsinki shipyard honoured Minister Suominen by appointing him the godfather for NS Vaygach.

The Finnish confidence turned into disappointment at the beginning of 1989 when Gosplan reallocated a large sum of the national shipbuilding budget from Morflot to the Ministry of Fisheries. Having to operate within strict budget limits now, Morflot decided to prioritise SA-15–type (short for Sub-Arctic 15,000 dwt) Arctic icebreaking freighters over the nuclear icebreaker. Those freighters were able to tackle ice a metre thick, and had proved their functionality as icebreaking vessels during severe winters in the early 1980s, but they provided few advantages for the company in price negotiations. The technical complexity and nuclear exceptionalism that had made the nuclear icebreaker project a political priority were now an unaffordable luxury for the end-user organisation that could get three icebreaking cargo-ships at the price of one Taymyr.

The spring and summer passed without anyone confirming whether the nuclear icebreaker project was to continue. In January, the Soviet civil servants repeated unanimously that they had neither power nor resources to order a nuclear ship from Finland. In February a high up political official assured that these rumours were simply untrue.

Directors Laine and Horn put their hope in the only remaining level of the Soviet hierarchy, General Secretary Mikhail Gorbachev, who would be arriving for an official state visit in October 1989. Gorbachev was expected to be able, and according to some sources also willing, to bypass normal protocols and economic restrictions and to confirm the order of the third nuclear icebreaker.

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423 Secret memorandum 19.7.1988 on ship prioritising in the 13th five-year-period as evaluated in June 1988, WM 30, Elka; Telex from Zvegintsev, Sudoimport to Pekka Laine 20.10.1988; Minutes from meeting in Gosplan 24.11.1988, WM 30, ELKA.
424 Ilkka Suominen to Ju. N. Volmer 29.6.1988; Minutes from meeting in MVES 2.2.1989, WM 30, ELKA.
425 Memorandum from meeting at Helsinki shipyard 19.2.1989; WM 30, ELKA.
426 Barr. “The shipping crisis in the Soviet eastern Arctic”.
427 L. Jakobsson’s notes of phone call with Soviet inspector Danilov 26.1.1989; Memorandum from meeting at Helsinki shipyard 19.2.1989; Minutes from meeting with Soviet representatives in the Economic Commission 2.2.1989; Minutes from meeting with Komarov and Zvegintsev in Moscow 6.1.1989, WM 30, ELKA.
Indeed, the late autumn of 1989 was to be globally memorable in many ways. Politically, the Finnish-Soviet affairs were perhaps as relaxed as they had ever been during the Cold War, but the bilateral trade had no longer a meaning as a mirror of this political relationship. Wärtsilä Marine, the biggest Finnish shipyard company, went bankrupt. The Soviet Union collapsed. The T3 project was forgotten.

Picture 11: President Koivisto (on the right) had invited General Secretary Gorbachev (on the left) already in the beginning of his tenure but he has been too busy to come to Helsinki before October 1989. As the cartoonist Kari Suomalainen noted, the visit coincided with increasing economic problems at Wärtsilä’s shipyards. As the picture also implies, the expensive hard technology projects were no longer a priority for the Soviet leadership but consumer goods. Published HS. 25.10.1989, photo: Visavuori Museum, used with permission by Kari Suomalaisen perikunta.

At the end of the Cold War, nuclear icebreakers were still politically and technologically exceptional objects. They just were no longer appropriate instruments of technopolitics in the Finnish-Soviet relationship. The framework in which the Finnish icebreakers had gained its political meanings broke apart. The long and unsuccessful negotiations over the third Taymyr demonstrated how the arguments that had led to such a rewarding agreement in 1984 had lost their functionality in only five years.

3.7. Conclusion: Technopolitical flagships of the East-West Cooperation

The Cold War characterised the techno-economic system of the Finnish shipbuilding as a fusion of politics and business. This chapter has examined different aspects of technopolitics in international relations through the lens of exceptional projects: the Finnish-Soviet nuclear icebreaker project that spanned from the 1950s to the 1980s, Finnish-American efforts related to the USCG icebreaker procurements, and the two submersibles ordered by the Soviet

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Academy of Science. The icebreakers and submersibles were not the only vessels that carried political, economic and technological meanings between Finland and Cold War superpowers but as the flashy flagships of technological development, they cast a light on the entangled technopolitical practices in the Cold War interaction.

The nuclear icebreaker project lasted long enough to demonstrate that the technopolitical qualities were not stable and essential but dynamic and flexible. Icebreakers in overall were big enough to showcase the political meanings of border-crossing technological cooperation and small enough to avoid challenging the Soviet nuclear projects. They were strategic enough to rise above other projects and civilian enough not to endanger the Finnish position outside the superpower conflict.

The post-war Soviet Union and post-war Finland had many differences but they both prioritised heavy engineering industries over production of consumer goods. According to Philip Hanson, in the Soviet Union the charm of heavy industry remained a rule of thumb even though the official priorities changed. Similar ideas of what constitute a nationally important technology added to the technopolitical appropriateness of big ships in the Finnish-Soviet relationship. It may provide a partial answer why consumer goods never gained the political weight that shipbuilding had in the Finnish-Soviet Cold War trade.

The unsuccessful effort to sell an icebreaker to the US Coast Guard showed how some of the technopolitical meanings were similarly recognised in Washington and Moscow. The US political leaders identified the Finnish icebreakers as a potential political instrument to contribute to Finland’s western orientation without endangering its position as a neutral buffer territory neighbouring the socialist world. These rationales were just not enough to overrule the US domestic concerns for their own national welfare and prestige.

The controversy over Rauma-Repola’s submersible project was triggered by concerns over national security in the USA. In Finland, the project became an object that reflected the sovereignty and national prestige of a small country.

The 1970s functioned as a watershed in the style of corporate political activities. Before then, political lobbying had concentrated on using personal networks to promote technological solutions. From the mid-1970s onwards, Wärtsilä adopted a systematic method of moulding

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432 Elena Kochetkova’s studies of the interaction between Finnish and Soviet traders in 1950s and 1960s demonstrate how the commercial and technical exchange was also shaped by ideological and bureaucratic restrictions. Elena Kochetkova, “’A Shop window where you can choose the goods you like’: Finnish Industrial and Trade Fairs in the USSR, 1950s–1960s,” *Scandinavian Journal of History* 43:2 (2018):212-232.
the icebreaker projects into the agenda of Finnish-Soviet affairs. In the Cold War competition for 'hearts and minds,' impressions mattered. When Finland balanced within the fuzzy lines of neutrality, discourses and imagery gained importance as state actors avoided too concrete signs of commitment.

The chapter responded to the second research objective by scrutinising the interaction between the shipbuilding industry and the high-ranking political leaders. The Finnish circles of political and economic elites were small and clustered. The state-corporate relationship easily became a matter of personal relations. The turbulent relationship between Wahlforss and Kekkonen in the 1950s and 1960s, the dynamic and respectful relationship between Horn and Kekkonen in the 1970s, and the distant relationship between Horn and Koivisto in the 1980s all had their influence in how the corporation chose to advance its stakes in state-level affairs.

The intermingling of politics and business characterised the interaction between the state and industry. Yet, the alleged separation of political and economic decision-making became an important performance that supported Finland’s policy of neutrality and even-handed approach to both superpowers. It provided an opportunity for Kekkonen to market Finnish icebreakers as a seemingly innocent but politically powerful tool in the USA, and it provided an essential backbone for Koivisto to resist American requests to interfere in private business.

Mauno Koivisto presided over the end of the Cold War and the gradual dismantling of the Cold War shipbuilding system. The shipbuilding industry and the president in the 1980s did not need each other as they had in the 1950s. On the one hand, the directors of big business had their contacts in ministries in both Helsinki and Moscow and were able to request audiences if they had a message to deliver. On the other hand, Koivisto was not as dependent on the support of the industrial elite as Kekkonen had been at the beginning of his career as a statesman. Both the personal style and the different political needs influenced in how certain ship contracts were used as a political tool in state-level affairs.

Finally, the last phases of the Finnish nuclear icebreaker negotiations illustrated the disintegration of the technopolitical meanings and priorities that had become established as ordinary in the Finnish shipbuilding system during the Cold War. The Finnish Cold War shipbuilding system nurtured the technopolitics of Finnish-Soviet cooperation up to the fall of Berlin wall. The nuclear icebreaker project in particular had gathered its technopolitical impetus from the need to address national security and national prestige. However, the terms that had sealed the contract in 1984 were no longer reusable in 1989. It was only the light cast by the once-successful project that lasted this long, and maintained the prospects of the third nuclear icebreaker until the bankruptcy of the company. The longstanding Soviet officials,
committed to the Finnish trade, supported the T3-project out of habit as it fit so well with their rhetoric and the state-level agreements, but they no longer had the power to close the deal. In the turbulence of Soviet perestroika, there was neither need nor resources in Moscow for a hero project of the peaceful coexistence. Mundane fishing ships and freighters overran the flashy nuclear flagships.

In previous chapters, this thesis has addressed the strategic, technological, and economic motives that propelled the expansion and establishment of the Finnish-Soviet producer-user relationship in shipbuilding in the post-war decades. At the height of the Finnish Cold War shipbuilding in the 1970s, the system had gained a seemingly unstoppable momentum from the fundamental dynamic of demand and supply: Finnish shipyards desired to sell and the Soviet governmental organisations were willing to buy. The Finnish recollections of the Soviet leaders using trade as a political weapon gradually faded away from collective memory. Even though, as the previous chapter showed, the technopolitical game with ship contracts continued, both governments benefited from being able to present economic cooperation as ‘just business’, often citing the Soviet Foreign Trade Minister Nikolai Patolichev: ‘Friendship is friendship but money has to be counted’. This chapter examines the Finnish-Soviet cooperation in science, technology, and industry that went beyond common commercial rationales.

At first, the chapter examines the style and structure of the techno-economic shipbuilding system through scrutinising the institutions of Finnish-Soviet cooperation in science, technology, and production. These elements included the extensive use of counter-purchases, scientific and technical cooperation, and joint production. Together, they shifted the Finnish interaction with the Soviet Union beyond purely commercial short-term rationales.

Maritime business history has witnessed numerous longstanding vertical partnerships. In these situations, the partners are occasionally ready to lower their economic requirements to maintain the mutually beneficial alliance between ship users, ship builders and ship designers. It is atypical, however, that private companies in one country develop this kind of a partnership with state organisations in another country. As this chapter shows, the Finnish shipyards traded with the Soviets with the purpose of generating profits. In doing so, they got interwoven in the technopolitical fabric of the socialist technology strategy. They engaged in different bilateral cooperation arrangements with Soviet organisations that were more intensive, more complex, and often less profitable than what would be acceptable under normal trade conditions.

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434 In particular the vertical integration of a shipyard and a shipping company, a prime example being Odense Steel Shipyard and Maersk shipping company. See *Et stålskibsøjle ved Odende Kanal*, ed. Jens Toftgaard (Syydansk Universitetsforlag: Odense 2016).
This chapter, then, addresses the second research objective on the relationship between the state and the industry as it examines how these cooperative arrangements shaped the technopolitical role and function of Finnish shipbuilding in Finnish-Soviet diplomatic relations. Scholars of scientific and technical cooperation classify this mode of cooperation as non-commercial channel of technology transfer, in contrast to normal commercial exchange. Nevertheless, Sari Autio-Sarasmo has argued that in the Finnish Cold War shipbuilding system, business and politics were often so tightly interwoven that a clear demarcation between commercial and non-commercial activities was impossible.\textsuperscript{435}

I take this as my starting point in this chapter to bring the political and technical interaction under scrutiny. The chapter argues that the state actors were motivated to give their support to cooperation in this field because it was an appropriate element of the Finnish-Soviet overall relationship. Scientific-technical cooperation was among the elements that built trust between Finland and the Soviet Union, promoted the competitive position that Finnish industry had in the Soviet Union, and was not too political to endanger Finland’s pose of being a neutral country.

Finally, this section examines the disintegration of the Cold War shipbuilding system by studying how the function and practices of transnational scientific and technological cooperation changed towards the end of the Cold War. Perhaps surprisingly, these Finnish initiatives and interests increased rather than decreased as the 1980s proceeded. When the economic and technical motivation at Moscow to continue the Finnish-Soviet special relationship in ship trade diminished, the alternative ways of buying political goodwill and maintaining footholds in the Kremlin appeared more valuable.

4.1. A novel shade of grey of the Finnish-Soviet economic cooperation in the 1970s

The middle and latter terms of Leonid Brezhnev (1906–1982, in office 1964–1982) is commemorated as ‘the era of stagnation’ when the Soviet economy on the whole slowed down and the ‘increasingly creaky men’ led the increasingly ‘creaky economy’.\textsuperscript{436} In Finland, Pauli Kettunen calls the 1970s as ‘the strikingly grey decade’—the decade when men in grey suits led the country, and the national political debates in foreign affairs and economic policy turned into seemingly apolitical consensus.\textsuperscript{437} The seemingly stagnated surface hid profound changes in the undercurrents. The 1970s introduced new elements and reinforced some of the


\textsuperscript{436} Hanson, \textit{The rise and fall of the Soviet Economy}, 2014, 130-131.

\textsuperscript{437} ”Kirkuvan harmaa vuosikymmen”: Kettunen, \textit{Historia petollisena liittolaisena}, 2015, 169.
old elements in the Finnish-Soviet relationship in a way that eventually marked a turning point in the scientific-technical and industrial cooperation in shipbuilding.

In the mid-1960s, the Soviet economic strategists recognized technological knowledge rather than technological artefacts as critical to Soviet industrial modernisation. Foreign economic and scientific connections were essential in accelerating the socialist progress that was to, eventually, overtake capitalism.\textsuperscript{438} This was the broader context, in which new programs for intensification of the Finnish-Soviet economic cooperation were introduced in the 1970s. In Finland, they were primarily interpreted from the perspective of the Finnish-Soviet special relationship.

Most of the novel agreements Finland signed with the socialist countries were triggered by Finland’s balancing act between east and west. At the turn of 1970s, Finland was negotiating on a free trade with the European Economic Community (EEC), which was of supreme importance for Finnish western economic relations. Negotiations had long been restrained by the Soviet Union. A breakthrough in the protracted negotiations took place only after Kekkonen and Prime Minister Kalevi Sorsa came up with the idea to ‘balance’ out the western integration by intensifying eastern connections, and suggested increasing economic cooperation with other socialist countries. In 1973, Finland signed an agreement on multilateral cooperation between Finland and the CMEA countries as well as so called KEVSOS-agreements (\textit{Kaupan Esteiden Vastavuoroinen vähenämminen Sosialististen maiden kanssa käytävässä kaupassa}; Mutual removal of trade barriers in trade with socialist countries). These free trade agreements with Poland, Bulgaria, the DDR, Hungary, and Czechoslovakia opened the door for Finland to approach also the EEC.\textsuperscript{439}

The two sides of this ‘comprehensive solution’ in Finnish trade politics were not equal. The agreement with the EEC was imperative for the Finnish western oriented forestry, while the KEVSOS agreements merely created an illusion of even-handedness in foreign trade policy.\textsuperscript{440} From the shipbuilding point of view, this foreign trade solution had immediately no remarkable impact. The socialist shipbuilders rarely competed for the same orders as the Finns. In Western exports, the free trade agreement removed only trade barriers that were seldom deal-breakers in ship trade.

The Finnish EEC-agreement prompted yet another scene in the Finnish-Soviet trade political theatre that raised the intensification of bilateral economic cooperation on the inter-governmental agenda. In 1975, Brezhnev implied that Finnish western integration hampered

\textsuperscript{438} Autio-Sarasmo, \textit{Technological modernisation in the Soviet Union and Post-Soviet Russia}, 2016, 81-82.
\textsuperscript{439} On EEC negotiations, see Aunesluoma, \textit{Vapakaupan tieellä}, 2011, 240-279.
\textsuperscript{440} Aunesluoma, \textit{Vapakaupan tieellä}, 2011, 276.
Finland’s commitment to the Soviet trade. As a solution, he suggested that the leaders of Finland and the Soviet Union would ceremoniously agree on a long planning horizon that would outline the development of the special trade relationship beyond the frames of the 5-year plans. The first Long Term Programme (Pitkän ajanjakson ohjelma, PAO) until 1990 expressed loosely defined political aspirations rather than concrete plans. President Kekkonen was also disqualified from personally ratifying the agreement. Nevertheless, his signature on the protocol for the Long Term Programme effectively signalled the political commitment to taking the Finnish-Soviet cooperation beyond the short-term commercial framework of trade. To underline its significance, the programme was frequently reassessed and renewed.

In the Finnish shipbuilding system, the Finnish political realities and the Soviet economic strategies appeared as a pressure to increase the imports of refined products and goods. The eagerness of the Soviet negotiators to add Soviet-made machinery to the bilateral trade exchange had no remarkable influence on the trade structure. As the two graphs below demonstrate, Finland continued importing mainly raw material and exporting mainly manufacturing goods. Yet, as the following sections on counter-purchases and scientific-technical cooperation show, the Soviet political aspirations did have an influence on the practices and strategies the Finnish shipbuilding system adopted towards the Soviet Union during the latter part of the Cold War.

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441 PM SPA/RN (Raii Nuortila?), Suomen ja Neuvostoliiton vuoteen 1990 ulottu kaupallis-taloudellinen yhteistyöohjelma, f. 59 "PAO tausta-aineistoa," signum 4742, IO, SPA.
442 According to Finnish practice, the president could only mandate the foreign minister to sign the protocol. In order to underline the involvement of the state leadership, Kekkonen eventually signed the mandate in a big way while Foreign Minister Paavo Väyrynen signed the actual agreement unceremoniously out of the spotlights. Aunesluoma, Vapaakaupan tiellä, 2011, 361.
Figure 19: Structure of Finnish-Soviet bilateral trade 1971-1990. The overwhelming majority of the Soviet imports to Finland consisted of raw materials, especially energy products, whereas Finland exported to the Soviet Union mainly refined goods. Data: Bank of Finland.
4.2. Counter-purchases in shipbuilding: Buying friendship and goodwill, 1975–1990

In the first period of Finnish Cold War shipbuilding, the Soviet foreign trade policy focused on imports of ships. As Chapter 2 described, some Finnish shipbuilding companies within the ‘Eastern Trade Promotion Committee’ had recognised the import of Soviet technology as instrumental for polishing their corporate brand, but overall the Soviet foreign trade officials exerted no excessive pressure for the shipyards to increase their procurements from the Soviet Union. Often the Soviet end-user organisations preferred Western components and machinery. Besides, in the Soviet economy of scarcity, the Soviet factories had few incentives to sell their products to Finnish shipyards.

In 1975, the Soviet interest in selling machinery and equipment for the Finnish shipyards resulted—as was typical at that time—in the founding of a new bilateral committee. The Finnish-Soviet Economic Commission organised the working group on ship equipment trade to examine and develop new possibilities of identifying and increasing industrial cooperation in the shipbuilding industry. Industrial cooperation at this point referred to ‘counter purchases’—Soviet content in the ships the Soviet Union had ordered from Finland as described in conjunction with the nuclear icebreaker project in the previous chapter. Counter purchases were not uncommon in Western trade either, but they were mainly required for major state procurements of arms and aeroplanes. Within the Finnish-Soviet framework, however, the target was to include Soviet components in every project.443

The Finnish Shipyard Association (STTY) collected attitudes towards increasing use of Soviet equipment from the shipyards in 1975 and compiled a long and discouraging list. The shipyards reported technical and commercial problems with Soviet components related to unsatisfactory information about the product, the poor quality or inaccurate standards, unpredictable type conversions, Soviet inspectors who were themselves unwilling to accept the Soviet component, and too long or unspecified delivery times.444

The knowledge of the problems did not facilitate the problem solving. Two years later in 1977, the ship equipment working group listed failed attempts to import Soviet equipment. The array of reasons varied from the wrong standards of the component to the wrong size, or the wrong specification. The purchases came with inadequate information and no spare parts. The Soviet partner might have never submitted a tender or proposed too high a price. A quarter of

444 STTY 12.12.1975 on the initial perception of the shipyards of the increasing purchases from the Soviet Union, STTY 37, ELKA.
a year could be the most accurate delivery window the Soviet factory could specify, fibreglass lifeboats might be made of aluminium, or floodlights would have poor luminous efficiency.\textsuperscript{445}

At the same time, the Long Term Programme and the other state-level protocols articulated as a decision of principle the aim to increase the proportion of Soviet components in Finnish-built ships up to 10%. In reality it remained somewhere between 4% and 7%.\textsuperscript{446} In part, the Finnish shipbuilding companies were reluctant to include Soviet components in their vessels because this would compete against their own production. As the previous chapter observed, this was particularly the case when Wärtsilä refused to replace the Finnish diesels with Soviet engines. However, no shipbuilding company was self-sufficient. There would have been several items that they could have purchased from the Soviet Union. The problems that hampered any significant increase in the Soviet content in the Finnish ships were matters of practicality rather than principles. Often, they originated in the rigidity of the Soviet planning economy. In addition to—or instead of—the components the Finnish shipyards would have wanted to use in their production, they ended up acting like trading houses outside their field of business.

The rigidities of the Soviet centrally-planned economy made it significantly easier to sell products to the vast and technology-hungry Soviet economy than to try to buy specific technological products from their production system. Even though factory-level production in the Soviet Union was subordinated to central planning, the command lines in hierarchical planning were long and complex. The Finnish trade negotiators noticed that the trade politicians in certain ministries and foreign trade organisations might set a high priority for Soviet content in the ships they ordered from Finnish yards, but these priorities were necessarily not the same in the other ministries and foreign trade organisations that should organise the purchases. Even the nuclear icebreaker project that was to showcase Finnish-Soviet industrial cooperation suffered from insubordination within Soviet industrial branches and required the intervention of both the State Planning Committee Gosplan and the Soviet Ministry of Foreign Trade to bind the ship import and steel export together.\textsuperscript{447}

Despite these poor results, the Soviet trade negotiators amplified their demands for increased use of Soviet components and technology in the early 1980s. In contract negotiations, Soviet

\begin{itemize}
\item \textsuperscript{445} Ship equipment working group 13.1.1977, list of products discussed but not purchased, "Suomen ja Sosialististen Neuvostotasavalttojen liiton pysyvän hallitusten välisen taloudellisen yhteistyökommision kone-ja laiteryhmän laivanrakennusteollisuuden alajärjestön toimintaryhmän alainen työryhmä 13.1.77: Luettelö tuotteista, joiden aikaisempi käsitteley ei ole johtanut kauppaan" STTY 37, ELKA.
\item \textsuperscript{446} Protocol 12th meeting of the Finnish-Soviet Economic Commission Machinery Division Shipbuilding group 4.-5.9.1979, STTY 1, ELKA; Programme for industrial cooperation to implement the measures decided in the 16th meeting of the Machinery Division as a part of the PAO protocol 12.11.1980, STTY 38, ELKA; Uola, "Meidän Isä on Toissä Telakalla," 1996, 249-252.
\item \textsuperscript{447} Haapavaara, Iso-Masa laivanrakentaja, 92. Interview Saankangas 5.2.2014.
\end{itemize}
customers invoked the moral of reciprocal cooperation in the fashion ‘because we buy from you, you have to buy from us’. They could also imply that the bid with the highest level of counter purchases would win the contract. In 1983, the marketing department of Rauma-Repola concluded that counter purchases had become an established instrument in competition. In order to survive and to succeed in the future, the Finnish shipyards should stop ignoring the topic and hoping it would disappear from the agenda, but instead to create pro-active counter purchase strategy.

At the shipyard level, the issue was complex and multifaceted. The shipbuilding companies generally acknowledged the moral duty of Finnish export companies to participate in the import side of the bilateral trade. They were even ready to include a reasonable amount of counter purchases in their marketing budgets. However, they opposed the Soviet requirements of the maximum amount of counter purchases as a pre-requisite for getting a contract. These requirements forced the export companies to import goods they did not need and put especially smaller companies in a difficult situation.

There were four basic types of counter purchases. The first type was a simple barter trade in which a Finnish company swapped their products or services directly with some goods from their Soviet partner. This kind of exchange trade had obvious problems in the shipbuilding business as the shipyard and the buyer rarely had matching production structures. For example, when a Soviet company wanted to make a payment to Rauma-Repola using 50,000 tons of fish, which Rauma-Repola as a metal manufacturer had no means of processing, the Finnish Foreign Ministry needed to contact an Icelandic fish processing factory to proceed with the transaction.

The second type of counter purchase was compensation trade. It was essentially a lighter version of barter, in which part of the price was paid in cash and the rest with different products. For instance, when the Soviet Ministry of Fisheries faced dire economic problems at the end of the decade, they proposed paying for their ship repairs partly with fish. Besides the fact that a large amount of fish was a difficult asset to liquidise, the prospects of this arrangement were further deteriorated by the poor quality of the fish. The Finnish shipyard preferred payments in a combination of fish and scrap iron but because iron and fish were

under different branch ministries in the Soviet Union, this arrangement turned out to be too complicated.451

The third type of counter purchase was a buy-back arrangement in which a Finnish company received part of the payments with products of the production facilities they had delivered to the Soviet Union. For instance, pulp factories were partly paid for with pulp. Similar to the two first types, the buy-backs transferred part of the business risks to the Finnish company, as the value of future production was difficult to evaluate beforehand.

The fourth and the most common type of counter purchase in the Finnish-Soviet ship trade was to require the shipyard to buy a certain amount of products from their Soviet counterpart as a prerequisite for signing the contract. The items to be purchased were rarely specified beforehand, and often the Finnish shipyards ended up with a stock of Soviet equipment with no demand outside the Soviet Union. Rauma-Repola, for instance, investigated the possibility to re-export Soviet-made craft tools to Southern Africa, and reported that while ‘the prices were very competitive, the quality was too poor to any customers’.452 They also tried to re-export Soviet floating shipyards to India for Sudoimport’s requirements but these projects failed because of high prices or due to Soviet inability to make adjustments in their standard design.453

Rauma-Repola was the only shipbuilding company that frequently installed Soviet engines in its ships. Other shipyards imported merely simple components such as anchor chains and radio-equipment to be installed in Soviet-ordered ships, and miscellaneous other goods such refrigerators and bed linen to be used at shipyards for ‘production activities’. The counter purchase also included objects and materials that had only a remote connection to shipyards, such as cars that were only used to drive Soviet visitors from the railway station and lathes to be donated for vocational schools.454

The situation, in which foreign organisations urged private Finnish export companies to act like state-owned import distributors of goods that were not related to their own business, was uncomfortable from the point of view of the Finnish neutrality policy.455 In addition, the Finns were not quite sure where the impetus for the corporate-level requirements came from.

Officially, both sides of the intergovernmental Economic Committee agreed that the Finnish-Soviet bilateral trade should reach equilibrium at state-level without obligating individual

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452 PM RR/J. Weikkola “Vastaostot Neuvostoliitosta” 14.3.1985, f. ”RR Vastaostot II”, UPMA.
453 PM RR/J. Weikkola “Vastaostot Neuvostoliitosta” 14.3.1985, f. ”RR Vastaostot II”, UPMA.
454 Shipyard purchases from the Soviet Union, collected by the STTY, 1982-1986, STTY 37, ELKA.
Finnish corporations to balance their export with import.\textsuperscript{456} Soviet Deputy Minister Manzhulo reckoned that the Finnish shipyards exaggerated the burden of the required counter purchases but simultaneously promised that the Soviet officials would refrain from making any ‘insane’ requests.\textsuperscript{457} Other Soviet officials stated that it was not the policy of the Soviet central administration to make counter purchases into prerequisites for ship contracts and asked the Finnish shipyards to report the ‘most blatant’ examples of such demands.\textsuperscript{458}

This would suggest that at least part of the growing Soviet demand for counter purchases resulted from Soviet enterprises in which individuals mimicked the state-level rhetoric to generate extra profits from their cooperation with the Finns. Presumably, among these were the offer to sell Rauma-Repola mammoth tusks that were ‘perfectly suited to be symbolic allusions to the Soviet trade, showing [Rauma-Repola] to among the companies at the forefront of the Soviet trade as well as a prime trading partner of the Soviet Union.’\textsuperscript{459}

In part, the amplified Soviet interest in counter purchases can be explained by the acute need to find new export products. In the 1970s, the Soviet economy enjoyed windfall gains in their exports thanks to the OPEC-hike in oil prices, which had enabled increased imports of grain and machinery. Simultaneously, production difficulties, grain harvest failures, and military ventures in Afghanistan and elsewhere after 1979 drew the country deep into trade deficit.\textsuperscript{460} The superpower was increasingly depended on the foreign imports and it had to expand its exports to generate revenues to pay for the imports.

The logical explanation that could be derived from the economic difficulties would be that the Soviet Union wanted no longer to ‘waste’ its valuable oil in purchases just from Finland when it could earn dollars and pounds. While it was clear that the Soviet foreign trade politicians would have gladly add more machinery-export to the Finnish-Soviet trade protocols, this position was still not prevailing or decisive in 1970s and early 1980s.


\textsuperscript{457} PM 497 KPO/Inki on the visit of Deputy Minister Manzhulo in Helsinki 20.-24.9.1983, 19.9.1983, f. 50 TVPK 83 yms, signum 4741, SPA.


\textsuperscript{460} Hanson, The rise and fall of the Soviet Economy, 2014, 128-140, 154-156; Wilfred Lewis Jr. “East-West Economic relations”, OECD observer May (1978), 3-5.
Finns encountered Soviet officials who were more concerned with the socialist image of technological supremacy than economic scarcity. The asymmetrical trade structure clearly irritated the superpower’s self-esteem even though it was not often spoken about in public. Juri Piskulov, a long-time director in Finnish-Soviet economic cooperation and a committed member of the unofficial club of Finland’s friends in Moscow, admitted in 1983 to a Finnish civil servant during their informal conversation on a train that the relatively small volume of Soviet machinery in the bilateral trade was ‘embarrassing’.

The foreign trade politicians and civil servants, who had influence over the Finnish trade, were part of the Soviet economic hierarchy. Their action was constrained by political and economic realities. Yet, they were humans with certain ideological and emotional standing point. When studying the Finnish industrial decision-making during this period, we should not over-interpret it as a response to the international jolts or Soviet macro-economic development. The Finnish shipbuilding engineers made their conclusions primary as a response to the action and communication of the Soviet middle-management they had contact with.

Despite the low value and certain ridiculous aspects of the counter purchases, they were established as a technopolitical tool to improve the company brand among the Soviet foreign trade politicians. Illustrative of this is the fact that Rauma-Repola’s counter purchase strategy focused on business communications to politicians, instead of actual trading activities. The main goal was to create an illusion of an active partner. The marketing department instructed trade negotiators to make frequent enquiries after Soviet products. Even if the Soviet organisation had nothing to offer, it was not a valid excuse to avoid showing interest. No purchases should be made without the ‘necessary publicity’. Special, unique and extraordinary procurements that could be highlighted in advertisements were preferable. In addition to sending a couple of ‘impressive trade delegations’ to visit the Soviet factories every year, the company should also compose a common narrative to communicate ‘Rauma-Repola’s active and dynamic procurement policy’.

The communication procedure passed beta-testing with real Soviets. According to conversation minutes from a discussion with Soviet Vice-Commercial Representative A.V Tverdokhlebov, he had entered into a meeting with a negative attitude but changed his mind after hearing the Finnish assurances: ‘I was aggressive when preparing for this negotiation. I had the impression that Rauma-Repola was categorically against purchases from the Soviet

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461 Notes from an informal meeting between Timo Repo and J.V. Piskulov 31.8.1983, f. 50 TVPK 83 yrs, signum 4741, SPA.
Union but now I understand that Rauma-Repola as a whole is dealing with the matter in a coordinated fashion’.463

In the first half of the 1980s, the Soviet market attracted an increasing number of Western and Asian companies. The race for the status of the most preferred and privileged trading partner made Finnish export companies willing to accept counter purchases as an established part of the Soviet trade.464 While this appeared as ultimately rational within the Finnish shipbuilding system, the growing counter purchases were about to conflict with the Finnish national goal to maximise domestic gains from the bilateral trade.

According to the rule of thumb, over 80% of the products sold via the Finnish-Soviet clearing trade system should be of domestic origin in order to prevent other countries from benefiting at the cost of Finnish workers and companies. A curious detail was that the Licensing Office counted the Soviet components as non-foreign content. The more the Finnish ships had Soviet content, the less the Finnish manufacturers and subcontractors had opportunities to benefit from the trade.465 The Finnish labour market organisations frequently reminded the shipbuilding companies that counter purchases were not desirable when if they competed against Finnish production.466 The Licensing Office also complained in 1986 that the Finnish shipyards accepted prices for Soviet components that were above market level in a desperate attempt to maximise the value of their purchases. At worst, the Licence Office stated, Soviet components were priced up to 3-4 times above their market price.467

In 1986, Soviet negotiators raised their demand for counter purchases to 15%. A while later, Sudoimport confirmed that they were not allowed to sign a trade agreement without sufficient counter purchases. In 1987, the demands were expanded to 25-30%.468 The effect of these higher requirements for Soviet content in Finnish ships is difficult to evaluate, as only a few new ship orders were signed during the last years of the Soviet Union. However, the surrealism of the high demands can be evaluated against the situation in the fall of 1987, when after years

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464 Speech Director Stefan Widomski, Nokia in the SNS 40-anniversary commercial-economic seminar in Espoo 11.2.1985, f. “RR Vastaostot II”, UMPA.
465 Letter from LJ (L. Jakobsson) to Pekka (Laine) 19.11.1987, WM 30, ELKA.
466 PM/ Federation of Finnish Metal industries, (Metalliteollisuuden keskusliitto) E. Forsman to STTY 29.3.1985 on domestic content in Soviet trade, STTY 3, ELKA.
467 Circular 4.2.1988 from CEO of Confederation of Finnish Industries T. Relander to CEOs of the member companies, ‘Suomen ja Neuvostoliiton valise kaupan tilanne’, WM 34, ELKA.
468 Letter from licensing office, forwarded by STTY to its members, and its enclosures 15.10.1986, STTY 14, ELKA.
of continuous committee work to increase industrial cooperation, the share of Soviet content was still as low as 8%.469

The restructuration of the Soviet foreign trade system after 1987 left the Finns and some of the Soviets in a state of uncertainty and confusion. The decreasing volume of orders from the Soviet customers encouraged the Finnish shipyards’ desperate struggle to maintain the political good will they had in the Soviet Union in the high political quarters in Moscow. The elements of absurd theatre in the Soviet trade were crystallised in these last years before the dissolution of the Soviet Union. The interviewees tend to refer to industrial cooperation with diminutive and derogatory nicknames. Counter-purchases denoted ‘a magical world that entitled to do everything funny’.470

However, the piles of dusty stock of secondary Soviet goods abandoned in storehouses are emblems of some of the aspects of this late-Cold War shipbuilding system. The purchases appeared as irrational only after the dissolution of the Cold War shipbuilding system. As long as there were any prospects of Soviet ship trade, such counter purchases were not a joke but a serious business.


In the second part of the Cold War, the Finnish leverage on the Soviet market was increasingly embedded in the intangible assets of specialised knowledge and expertise. As the figure below shows, the proportion of miscellaneous vessels continued to be strikingly high in the Finnish shipbuilding. The category included vessels that were generally more design and knowledge intensive compared with standard cargo type vessels. This section examines Finnish-Soviet scientific-technical cooperation and the active role of the Finnish shipbuilding companies in developing the Soviet demand-structure towards types that were profitable for the Finnish shipyards.

While counter purchases were controversial in the Finnish-Soviet ship trade because they forced the Finnish shipbuilding companies to make purchases they would otherwise refuse, the scientific and technical cooperation was complicated because it included knowledge co-creation or dissemination of some sort. For companies, which one best asset was knowledge, that posed a risk.

469 Records of the 20th session of the Soviet-Finnish Commission on Economic Cooperation (Economic Commission) working group for machines and devices shipbuilding division (Working group for shipbuilding) 26.-30.10.1987, WM 34, ELKA.
As Chapter 2 noted, scientific and technical cooperation had been incorporated into the Finnish-Soviet economic relations early in the 1950s but this kind of non-commercial cooperation initially gathered merely a symbolic value in shipbuilding. A watershed moment in Finnish engagement in scientific and technical cooperation took place in the mid-1970s. Immediately after the New Year holidays in 1976, Wärtsilä contacted the Finnish side of the Scientific-Technical Committee and enquired about interest in the Arctic among Finnish manufacturing industries. Three months later, a group of seven Finnish companies made a joint proposal for an extensive scientific and technological project in which Finnish and Soviet corporations and research laboratories would jointly study and develop Arctic maritime technology. Of these Finnish companies, Wärtsilä, Rauma-Repola, Valmet, and Navire were shipbuilders, Rautaruukki was a steel manufacturer closely connected to the ship production, and Neste was a state-owned oil refinery, which had in 1972 joined an international oil prospecting consortium operating from the North Sea to Spitsbergen. They were joined together by their shared interest in the Soviet offshore fields in polar regions.

These seven companies were clearly able to trade with the Soviet Union within the conventional framework of bilateral trade. Why they now chose to proactively engage in scientific and technological cooperation which they had previously regarded merely as a burden to be minimised?

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The Arctic proposal made sense in the broader techno-economic context of Finnish Cold War shipbuilding as a reaction to a set of environmental changes. The Finnish shipyard industry chose to apply scientific and technological cooperation—originally a Soviet political tool to get access to western technology—as a tool to leverage their competitive position in the Soviet markets.

The first environmental jolt was a consequence of the post-OPEC turmoil. The global market for crude oil carriers and other cargo ships collapsed in the aftermath of the oil crises. The low demand for merchant ships and the temporary thaw in the international relations encouraged new competitors to enter the socialist markets. Even though, as the following graph shows, western competition did not directly hamper the Finnish position in the Soviet shipbuilding, it was about to decrease prices of standard type vessels. The Finnish shipyard managers were on the lookout for new branches to expand their production to special-purpose vessels that would be strategic or sophisticated enough to eliminate cost-competition.

![Origin of ships (GT) registered in the USSR, 1974–90](image)

**Figure 21**: Country of origin of the merchant ships registered in Russia/Soviet Union (GT). The red line represents socialist countries including East-Germany, Poland and Yugoslavia. The grey line represents Western European shipbuilders together (Finland excluded) and Japan. Data: LRS.

Simultaneously growing interests in hydrocarbon deposits under the ocean floor, especially the explorations in the North Sea, had made offshore technology an attractive alternative to shipbuilding. After the easily reachable oil wells ran dry, the oil explorations were expected to move into deeper, colder, and harsher areas. In particular, there were signs of Soviet interest in turning the focus of their oil and gas strategy from West Siberia to the Barents Sea offshore

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fields. While the Soviet oil and gas technology was quite capable in shallow onshore fields, they relied on Western technology for exploring and exploiting hydrocarbons in the demanding Arctic offshore conditions.474

Finland was not an Arctic maritime country and it had no domestic oil drilling industry in which it could develop and test new products. The Finnish shipbuilders had experience in building ice-going vessels, but the ice conditions in the Baltic Sea were different to the conditions in the Soviet polar areas. Even though Wärtsilä had successfully developed polar icebreakers, advanced ice research in the Soviet Far North was not unproblematic because of the expenses and strategic sensitivity of the area. Paradoxically, as a civil servant from the Finnish ministry of foreign affairs noted, Finnish shipbuilders were generally more familiar with the Canadian Arctic waters than with the conditions in the relatively close Barents Sea.475

A further factor that made scientific and technical cooperation in Arctic offshore attractive to the Finnish industries was, if not quite jealousy of other Western countries, at least a sense of competition against them. At the time when the Finnish companies proposed Arctic cooperation, the Soviet Union had already initiated projects in oil exploration and pumping with American, French, Canadian and Japanese companies.476 The Finnish industry had reasons to do what it could to maintain its special position as an intermediary of Western technology to the Soviet Union.

Thus, in the spring of 1976, when the group of Finnish companies made their proposal to the Scientific-Technological Committee for an Arctic technology project, they were primarily in search of new business opportunities.477 They had recognised a growing market in the Soviet Arctic offshore field and decided to use scientific and technological cooperation to enhance their competitive position in the Soviet Union, to funnel R&D investments to Arctic technology, and to enter into new markets.478 To the Soviet Union, they offered their


476 *OECD Observer* 92/1978;

477 O. Urvas, Finnish Embassy in Moscow material related to Arctic project 5.5.1977, f. “Arktinen projekti II”, c. Sere, UPMA

478 New business was surprisingly problematic because the level of bilateral trade was restricted meaning that new exports was in competition with existing trade. PM 2.3.1983 about oils and gas in the Soviet Arctic continental shelf: Finland and other Nordic countries (Neuvostoliiton arktisen manerjalousan öljyn ja kaasun hyödyntäminen; Suomi ja muut Pohjoismaat, J. Inki), f. “Arktinen projekti 1982–1985”, signum 43-2 NLO-2 UMA; Records of Finnish-Soviet Scientific and Technical cooperation committee’s meeting 31.5-2.6.1977 in Moscow; 15.-17.5.1978 in Helsinki, c. Records of Finnish-Soviet Scientific and Technical cooperation committee (Suomen ja Neuvostoliiton Tieteellis-tekisen yhteistyökomitean pöytäkirjat, hereafter: ”TT-komitea pöytäkirjat”) UMA.
experience in ice-going vessels, willingness to engage in long-standing cooperation, and the possibility to channel Western technological expertise.479

The Soviet party of the Committee expressed its positive attitude towards the Finnish initiative in March. The Finnish eastern traders, used to negotiations that could last years, took this surprisingly short reaction time as a sign of great interest. This conjecture was also confirmed by the Soviet Chair of the Scientific-Technical Committee D. M. Gvishian when he told his Finnish colleague Pekka Kuusi that the Soviets took the proposal seriously. According to Gvishian, the Soviets were already negotiating with the American company Brown & Root Inc., whose expertise he regarded as the best in the world. Nevertheless, the Soviets ‘had to be careful with western companies—they all claim to know more than they actually know.’ Finland, it appeared, was not included in this category of skilful but unreliable Western business partners.480

Finland was not the only possible channel available for the Soviet Union to obtain Western technology, nor was it the most experienced partner in Arctic offshore explorations. Yet it was considerably convenient collaborator for a long and extensive cooperation project.

The shipyard managers prepared a dossier of the Arctic project for President Kekkonen to take on his fishing trip to the Soviet Union in the summer of 1976.481 The Finnish practice of using president as a courier in industrial diplomacy raises a question of the motivation of the state leader to engage in such an action. Like in Chapter 3, the industrial and political interests in Finnish-Soviet relations might not have been the same, but they were compatible: Acting as intermediators offered the high political figures a possibility to promote their personal political status as well as broader diplomatic goals of Finland. At this point, the Arctic project was not a priority for the state of Finland in a sense, its success was critical for the national wellbeing. However, it was a useful as a gesture of political goodwill in the Finnish-Soviet relations.

Already in the October of the same year after Kekkonen’s visit, Gvishian specified that the Soviet Union would be interested in cooperating with Finland in generating more knowledge

479 Memorandum from Finnish-Soviet negotiations in Arctic cooperation 8.4.1976 in Moscow; Minutes from “Tycoon meeting” (Vuorineuvostapaamminen) 16.9.1976 on Arctic project; Minutes from meeting in GKNT 7.6.1976 on Arctic Project. Arctic project II, Sere, UPMA: Finnish commission proposal on “Northern USSR Arctic offshore research in cooperation with Finnish companies and research organisations” to GKNT 4.7.1979, f. “Arktinen projekti”, Sere, UPMA.
480 Minutes from a Meeting between D.M. Gvishiani and Finnish corporation managers on Arctic project, Veronica Suni, 26.10.1976, f. Arktinen projekti II, c. Sere, UPMA.
on ice mechanisms and ice physics, as well as developing state-of-the-art equipment. The actual oil explorations the Soviets wanted to conduct by themselves.\textsuperscript{482}

Eventually, shipbuilding became a topic in its own right in the Finnish-Soviet scientific and technical agenda. In 1977, for the first time since the beginning of the cooperation, the minutes of the Finnish-Soviet Scientific-Technical Committee meeting recorded a significant number of studies initiated by the Finnish maritime sector: propulsion in heavy ice conditions, physics and mechanics between ship hull and ice, and winter navigation.\textsuperscript{483} Reflecting the attitude adjustment, the busy shipbuilding directors now found time to participate in non-commercial cooperation. Wärtsilä’s director, Tankmar Horn, was appointed as a member of the Scientific-Technical Committee in 1979. Tauno Matomäki, the director of the oil-rig builder Rauma-Repola, became the leader of the offshore working group.\textsuperscript{484}

Within the Arctic Project, the Finnish research organisations and industrial research laboratories collected annually a list of research topics related to Arctic offshore technology, ice-going vessels, and Arctic electrical engineering. Together with their Soviet colleagues they also organised symposia in Helsinki and Moscow. The State Technical Research Centre in Finland (Valtion teknillinen tutkimuskeskus, VTT), was interested in the study of ice as a geophysical and technical problem, and in ice forecasting methods; Wärtsilä was interested in the ice-mechanism in icebreaking; Rauma-Repola was concerned with ice pressure in offshore drilling structures. The Soviet researchers presented studies based on their experience of Siberian river transportation, Arctic seafaring, and ice research methods.\textsuperscript{485}

In Finnish-Soviet research exchange, it was customary that the sending organisation paid for the travel and the hosting organisation paid for accommodation during the research visit. In 1982, almost four thousand Soviet scientists participated in research cooperation in Finland while almost three and a half thousand Finnish scientists travelled to the Soviet Union.\textsuperscript{486} The

\textsuperscript{482} 26.10.1976 Vice president D.M. Gvishian and Finnish corporation managers meeting on Arctic project, f. “Arktinen projekti II”, Sere, UPMA.

\textsuperscript{483} Records of Finnish-Soviet scientific and Technical Cooperation Committee’s meeting 31.5-2.6.1977 in Moscow, c. TT-komitea pöytäkirjat, UMA; Records of Finnish-Soviet scientific and Technical Cooperation Committee’s meeting 15-17.5.1978 in Helsinki, c. TT-komitea pöytäkirjat, UMA.


\textsuperscript{485} PM on Arctic offshore technology symposium in Moscow, 28.12.1979; Academy of Finland, memorandum on Workshop on Promotion of Arctic research in Helsinki 5.12.1979., f. “Arktinen projekti”, Sere, UPMA. Arctic Project, Sere, UPMA; PM (A. Inkari) 3.1.1984 “Arktisen projektin nyky vaihe”; VTT proposals for cooperation projects 29.7.1979, f. “Arktinen projekti”, Sere, UPMA.

\textsuperscript{486} Records of Finnish-Soviet scientific and Technical Cooperation Committee’s meeting 30.-31.5.1983 in Moscow, c. TT-komitea pöytäkirjat, UMA.
Arctic project gained a strong foothold in this Finnish-Soviet cooperation when ice model tests and seafaring in hard ice conditions became one of the primary focus areas in the revised Long Term Programme (1981-1995) that was signed in Moscow in 1981. The annual plans for scientific and technical cooperation between 1981 and 1985 also mentioned Arctic maritime technology as a topic of utmost importance.

While the Arctic project was about scientific and technological cooperation, it had close links to economic cooperation coordinated by the intergovernmental Economic Committee. The chairs of the Arctic project represented scientific organisations but the possibilities of translating the scientific and technical knowledge into economic products was a constant topic. For the Finnish shipbuilding industry, the Soviet Arctic promised a prosperous future.

The Arctic project was indirectly boosted by international Cold War politics. After the Soviet Union invaded Afghanistan, the COCOM tightened its export control with a special focus on oil drilling equipment and offshore technology. At the turn of the 1980s, Western restrictions for technology transfer promoted Finnish competitive position in the Soviet Union once again as they had done during the heights of COCOM embargo in the 1950s.

After the inauguration of Mikhail Gorbachev and the initiation of the perestroika campaign, the Finns had every reason to expect the business opportunities to grow rather than diminish. In 1985, Finland and the Soviet Union launched a feasibility study for a large cooperation project on the Kola Peninsula which would employ Finnish companies in the development of this Arctic area close to the Finnish borders. In October 1989, during his visit to Helsinki, Gorbachev signed an agreement on a joint project for the development of Kola Peninsula.
At this point it still seemed as if the great Arctic technology boom in the Soviet Union was just waiting around the corner.

The advantageous Finnish position in the Soviet market did not remain unnoticed by the Western observers. ‘Money has no smell, say practical-minded Finns as their country snuggles up closer to big-neighbour the Soviet Union,’ reported the Journal of Commerce in 1987. From the American point of view, the problem was not so much Finns selling technology to the Soviet Union but that it was difficult for the American companies to gain a share of the Arctic business.494

In 1988 and 1989, the Arctic project remained the third-largest scientific and technical cooperation programme after agriculture and construction. However, the trend of research exchange was already declining.495 After the Soviet Union disappeared, the 40 years of Finnish expertise in navigating the hierarchical Soviet planning economy lost its value. Scientific and technical cooperation were no longer a technopolitical tool to buy political goodwill among the Soviet foreign trade officials.

The technological aspects of the Finnish-Russian scientific and technical cooperation survived the end of the Cold War better. In particular, the research cooperation in the study of ice conditions and environmental circumstances in the Barents Sea continued into the next millennium.496 In that way, this study of the Finnish-Soviet Arctic cooperation supports the view that the social aspects of the scientific and technical cooperation were perhaps more important than the political ones. As scholars of west-east technology transfer in Cold War computer science and forestry have pointed out, most of the significant long-term results of border-crossing cooperation project were the social network of experts that expanded on both sides of the East-West divide.497


The previously-discussed industrial and scientific-technical cooperation belonged to the Finnish-Soviet bilateral relationship. During the first half of the 1980s, the Soviet Union

495 In 1988, research exchange in the Arctic project included 70 scientists vising Finland and the Soviet Union. In 1989, 71 Soviet scientists visited Finland and 59 Finnish scientists travelled to the Soviet Union. Compare with exchange in construction, (182 to Finland and 26 to the Soviet Union) and agriculture (91 to Finland and 101 to the Soviet Union). Record of the Finnish-Soviet scientific-technical committee, “Suomen ja Neuvostoliiton välisen tieteellis-teknillisen yhteistoimintakomitean XXXIV yhteiskokouksen pöytäkirja 3-5.9.1989 Moskovassa,” c. TT-komitea pöytäkirjat, UMA.
suggested cooperation with third countries to better fulfil its increasing needs for maritime technology. The multilateral Nordic-Soviet cooperation in Arctic maritime technology never materialised, but it interestingly revealed some early fissures in the Finnish-Soviet bilateral relationship when national interests in shipbuilding conflicted with increasingly international technology development.

In the spring of 1982, Juri Piskulov proposed an investment of USD300 million from the Nordic Investment Bank for a ‘Nordic Arctic Project’. Later on, he specified that the Soviet Union recommended the Nordic countries to found a collaborative organ that would coordinate the production, financing, and export of Arctic offshore technology.

Piskulov’s idea of Nordic cooperation stemmed from the Soviet need for a certain type of concrete oil drilling platform that would be capable of reaching hydrocarbon deposits over 300 metres below the surface. Compared to the conventional metal platforms, concrete structures endured better in ice conditions. Casting these concrete structures required, according to Piskulov’s understanding, sheltered and deep water in conditions best found in Norwegian fjords. Rauma-Repola was currently building oil drilling vessels and platforms for the Soviet Union, but the use of Finnish technology was restricted to open waters less than a hundred metres deep.

From the Soviet point of view, the Finnish-Norwegian cooperation appeared attractive. Norwegians had the expertise to build the concrete platforms that Piskulov was looking for. On the other hand, the Finns had the advantage of extensive experience in doing business with the Soviet economy. In addition, if the payments were channelled through the Finnish-Soviet clearing system, the Soviet Union could pay for its technology purchases without convertible currencies.

From the point of view of Finnish foreign affairs, a tripartite collaboration between the Soviet Union, neutral Finland, and the NATO-member Norway was utterly uncomfortable. Jorma Inki, a civil servant in the Finnish Foreign Ministry was concerned that it would draw Finland into a politically awkward position: ‘At the moment it would be politically problematic for Finland to suggest, as a spokesperson of the Soviet Union, to Norway—a member of NATO—

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498 PM2 69 on the Soviet “so called Arctic project” and the Nordic countries, 8.4.1982, f. Arktinen projekti 1982-1985, signum 43-2 NLO-2, UMA.
499 PM 2.3.1983 about oil and gas in the Soviet Arctic continental shelf: Finland and other Nordic countries, “Neuvostoliiton arktisen mannerjalustan öljyn ja kaasun hyödyntäminen; Suomi ja muut Pohjoismaat” (J. Inki), f. Arktinen projekti 1982-1985, signum 43-2 NLO-2, UMA.
extensive operations in the regions of the Barents Sea'.\textsuperscript{502} Besides political risks, there were also economic risks involved the endeavour. The Nordic cooperation would challenge Finnish competitiveness in the Soviet markets. As Inki noted, '[w]e have to remember the competition between Finland and Norway. Finland gains the best results within the framework of the bilateral trade.'\textsuperscript{503}

The Norwegian offshore industry showed no ideological or political hesitation regarding Soviet trade. Since 1980, the Norwegian-Soviet trade had experienced a rapid growth, but it consisted mainly of raw materials. In order to increase the share of machinery, Norwegians had organised an offshore seminar in Moscow, and invited Soviet experts to visit Norwegian factories and shipyards. In April 1982, the Soviet State Committee for Science and Technology organised a four-day conference on Soviet-Norwegian industrial cooperation in Oslo.\textsuperscript{504}

For the Norwegian government, any kind of supranational organisation in the Arctic regions was problematic in itself because Norway had unfinished territorial disputes with the Soviet Union. The fact that it had often been Finnish ships and technology enabling Soviet explorations in the strategically controversial areas did not improve the Finnish-Norwegian relations.\textsuperscript{505} Nevertheless, the business opportunities with the Soviets eventually overran political restrictions. Later in 1982, the Norwegian government granted its industry permission to conduct trade with organisations in the Soviet Arctic despite the unsolved territorial disputes.\textsuperscript{506} Finnish shipyards noticed that the Norwegians entered into competition for the same Soviet orders of oil-drilling platforms that they were interested in.\textsuperscript{507}

While the Norwegian offshore industry was striving for closer economic cooperation with the Soviets, it was reluctant to cooperate with Finland, whose expertise in Arctic offshore work they regarded as technically inferior. Instead of broad Nordic cooperation, the Norwegian offshore companies founded their own consortium to coordinate their export and marketing


\textsuperscript{505} From T. Brotherus Finnish Embassy in Oslo to Formin 29.3.1982 "Barentsin meren öljyetsinnät, Norjan hallituksen kanta," Arktinen projekti 1982-1985, signum 43-2 NLO-2, UMA.

\textsuperscript{506} Telegram from Finland's Embassy in Oslo to UM 23.9.1982, f. Arktinen projekti 1982-1985, signum 43-2 NLO-2, UMA.

\textsuperscript{507} PM 2.3.1983 On the Soviet continental shelf, Finland and other Nordic countries, f. Arktinen projekti 1982-1985, signum 43-2 NLO-2, UMA.
In 1983, BOCONOR (Barents Off-shore Consortium of Norway) signed a contract with the Soviet Union to develop a master plan for Soviet oil and gas explorations in the Barents Sea.

The chair of BOCONOR, Rolf E. Rolfsen, articulated the Norwegian attitude towards offshore cooperation with Finland in 1984 in a meeting with Finnish ambassador in Oslo Jaakko Blomsted. According to Rolfsen, Norwegians needed no assistance from the Finns. The only role that he could imagine for the Finnish industry in the Arctic offshore was a minor subcontractor subordinated to Norwegian project managers. After the meeting, Blomsted reported to Helsinki: ‘In my opinion it is clear that Rolfsen with his arrogant response wanted to clarify what close relations and daily contacts they have with their [Soviet] partners. This rules out the possibility of Finnish intervention.’ As the Norwegian state secretary Arne Skaugne confirmed at an oil seminar in Kirkenäs in November 1985, Norwegians had no intention of sharing their prospects in the Soviet Arctic with their neighbours:

In general, both Sweden and Finland are countries with advanced industrial traditions that are for the most comparable to ours. What our Neighboring countries lack is offshore experience of substantial importance. I therefore do not see the need, at this stage, to actively seek exclusive cooperation in these areas with Sweden and Finland.

The controversy surrounding the Nordic-Soviet technology cooperation reveals a juxtaposition that is utterly dissimilar to the traditional picture of the East-West confrontation. Instead of Western countries joining their forces to compete against the Soviet Union, the private industries in Finland and Norway, accompanied by diplomats and politicians, competed against each other for closer cooperation opportunities with the Soviet Union, boasting about their warm relationship with the Soviets.
Although the Soviet-Norwegian affairs were far from unproblematic and proceeded far from smoothly, they seriously questioned the dominant position of the Finnish shipbuilding industry in the Soviet Arctic. Among the other things, it pushed the Finnish shipyards to pay more attention to their political appearance among the Soviet foreign trade officials.

4.5. Industrial Cooperation: Playing the role of an active partner, 1988–1990

Despite all of the controversies surrounding the counter purchases and scientific-technical cooperation, they constituted only a light version of industrial cooperation. Joint production, in which a technically advanced Finnish company contributed intellectual capital to assist industrial production in the Soviet Union, had the potential to nurture new competitors.

Since the 1970s, the Long Term Programme, the Agreements on industrial, scientific and technological cooperation, as well as the trade meeting minutes had all expressed the Soviet interest in expanding industrial cooperation into joint production. The Finnish companies, for obvious reasons, had been rather unenthusiastic about replacing their own exports to the Soviet Union with assistance for the Soviets’ own production. When the shipbuilding directors of Rauma-Repola pondered future prospects in the Soviet market in 1980, they concluded that industrial cooperation with Soviet shipyards was not a realistic option; if it had been realistic, it would already have materialised.513

Towards the end of the last decade of the Cold War, the urgency of industrial modernisation in the Soviet Union brought joint ventures back to the agenda of Finnish-Soviet affairs. The revision of the Long Term Programme in 1988 mentioned industrial cooperation in shipbuilding at the top of the list of potential projects, implying its high priority.514 At a time when counter purchases proved to be an inefficient, bureaucratic, and expensive way to secure a firm foothold in the changing socialist market, joint production emerged as the last untested way of anchoring the Finnish shipyards tightly to the Soviet sphere of interest. In 1989, the foreign trade publication of the Finnish Ministry of Foreign Affairs reported that there were over hundred Finnish-Soviet joint venture projects in the pipeline.515

Wärtsilä’s shipbuilding subsidiary Wärtsilä Marine made the initiative of a joint ship design office in the Soviet Union in the spring of 1988. The listed benefits for the Soviet partners included transfer of skillsets in the production of special and complex ships from Finland to Soviet shipyards, training in the use of CAD/CAM systems in shipbuilding, income paid in

convertible currencies, increase in the export of Soviet components and machines, and a polished image of the Soviet shipyards.\textsuperscript{516}

In short, the proposal contained all aspects of cooperation that the Soviet Union had kept requesting from the Finnish shipyards, and every kind of technical competitive advantages the Finns had previously been reluctant to hand to the Soviets. Similarly to technology import from the Soviet Union, this proposal for a joint venture reflected the Finnish shipyards’ efforts to maintain their competitive position as a close trading partner of the key Soviet authorities and bypass the restrictions caused by the economic problems in the Soviet Union.

Wärtsilä Marine’s joint venture plan derived from a small group within the company that had investigated possibilities for industrial cooperation in the Baltic and the Black Sea.\textsuperscript{517} The earlier experiences of joint ventures in the Soviet Union had not been encouraging—bureaucratic problems without remarkable gains.\textsuperscript{518} The main rationale behind the ship design office was that the initiative would boost the company’s brand within the Soviet Union, and make Wärtsilä an interesting partner for other western companies interested in Soviet markets. \textsuperscript{519} As was phrased in a memorandum: ‘For the sake of our image we have to give something [to the Soviets]. We will play the role of an active partner.’\textsuperscript{520}

The joint ship design office, then, appeared as a huge marketing campaign. Finns assumed that ship design took precedence over Soviets other needs for economic modernisation. Design, unlike construction, also required a modest amount of fixed capital. The financial risks in the joint venture initiative were evaluated as rather small and consisting mainly of salaries. The main business risk was the danger of losing leverage in price negotiations if confidential cost calculations were leaked to the Soviet Union. In addition, Wärtsilä Marine’s memoranda express concern over the possibility that the Soviet partners would interpret the Finnish proposal only as a political project—in which case it could corrupt Wärtsilä’s brand instead of polishing it.\textsuperscript{521} Nevertheless, to maximise the political impact, Wärtsilä Marine employed the

\textsuperscript{516} PM 11.6.1988 (L.Jakobsson) ‘Ehdotus’, WM 30, ELKA.
\textsuperscript{520} PM 10.6.1988, (L. Jakobsson) on joint ventures, ”Yhteisyrykset”, WM 30, ELKA.
\textsuperscript{521} Letter draft 29.9.1988 C.E. Lindfors to minister Jo. M. Volmer ”Yhteistyöehdotus uuden sukupolven atomijäännärmurtajasta”, WM 40, ELKA.
highest-ranking directors of the Wärtsilä business group with the best networks to take the initiative in Moscow.\textsuperscript{522} 

During the summer of 1988, the working group in Wärtsilä Marine completed the proposal. According to the refined plans, Wärtsilä Marine would found a joint venture together with the Soviet Ministry of Merchant Marines, Morflot and the Ministry of Shipbuilding.\textsuperscript{523} The suggested shares for the stakeholders were 30\% for Wärtsilä Marine, 30\% for the Ministry of Shipbuilding, and 40\% for Morflot. This shows that Wärtsilä was willing to give the majority shares to the Soviet partners.\textsuperscript{524}

To promote the initiative through political channels, Wärtsilä Marine contacted the high political leadership of both countries. For instance, the company asked Finnish Foreign Minister Kalevi Sorsa to raise the project onto the agenda of the Economic Commission, and Finnish Prime Minister Harri Holkeri to discuss the initiative with his Soviet colleague N. Ryzhkov.\textsuperscript{525} According to an internal memorandum, the reactions on the Soviet Union’s side of the table had been encouraging, at least enough to proceed with the planning.\textsuperscript{526}

In the autumn of 1988, the joint venture in ship design was replaced with a more ambitious plan of cross-border joint ship production along the Finnish coast. Wärtsilä Marine now proposed the rationalisation of Finnish shipbuilding operations through coordinating and sharing resources between Finnish and Soviet shipyards.\textsuperscript{527} Around that time, the Soviet Ministry of Shipbuilding began to appear in the memoranda in parallel with the abbreviation BT (referring to Baltian Telakka, the Baltic shipyard in Leningrad subordinated to the


\textsuperscript{523} PM 11.6.1988 (L. Jakobsson) “Ehdotus,” WM 30, ELKA.


\textsuperscript{526} According to a note that had found its way from the UM to WM through several intermediaries, Ryzhkov had promised “to think about it” but nothing more. PM 28.9.1988 from L. Jakobsson to K. Airaksinen, WM 30, ELKA; PM WMH 29.9.1988 on a suggestion for WM’s joint venture in the Soviet Union, “Ehdotus WM:n yhteisestä suunnittelutoimistosta NL:ssa”, WM 40, ELKA.

Shipbuilding Ministry). This implies that the negotiations had proceeded from the ministry to the concrete shipyard level.\textsuperscript{528}

In 1988–1989, the cooperation project between Wärtsilä and the Baltic Shipyard became interwoven with the Finnish nuclear icebreaker project. The Wärtsilä Helsinki shipyard was building the \textit{Taigmyr}-class in Helsinki, and the Baltic shipyard was occupied with the \textit{Arktika}-class in Leningrad. At that point, the joint venture initiative was repurposed from an ambiguous image-boosting campaign into a purposeful lobbying effort to enter the Soviet nuclear icebreaker business.

In the 1980s, modular construction and international supply chains had become common in shipbuilding. The new techniques emphasised the function of shipyards as an assembly line that outsourced an increasing share of production to specialised subcontractors. Against this backdrop, the Finnish motivation to increase cooperation with the low-cost Soviet shipyards in its immediate vicinity was logical. The protectionist elements in the bilateral clearing trade had maintained the Finnish in-house production for a relatively long time, but now the increasing competition in the Soviet markets forced the Finnish shipyards to shift their priority from maximum production to streamlined competitiveness.

The Soviet politicians expressed considerably more interest in the projects than the intended industrial partner, the Baltic shipyard. A representative from the Soviet shipyard articulated their hesitance: ‘Although the advantages of the joint venture for the Soviet Union can be shown, the Soviet partners should also benefit from collaboration. Those benefits are still unclear’.\textsuperscript{529} The Finnish sources advertised the joint venture as a possibility for Soviet organisations to gain access to modern western technology and for the Baltic shipyard to develop its design processes. The Soviet organisation claimed to be doing this without need from Finnish assistance.\textsuperscript{530}

Morflot, as the primary end-user of icebreakers that were built at the Helsinki and Baltic shipyards, supported intensified cooperation. It did not, however, want to become a partner in joint productions of ships for third parties. According to Morflot’s evaluation, participating in such production meant only that it would pay for the production without bringing new vessels to its use.\textsuperscript{531} As a contrast, the Soviet Ministry of Shipbuilding had no interest in


\textsuperscript{529} PM 7.12.1988 (K. Juurmaa) on a meeting in Moscow “Muistio neuvotteluista Moskovassa 6.12.1988,” WM 40, ELKA.


\textsuperscript{531} ELKA, WM, f. 40, memorandum 2.9.1988 (C-E. Lindfors) on a meeting in Morflot, “Tapaaminen
cooperating with Finnish shipyards without using it as an opportunity to earn convertible currencies through exporting ships to third countries.532

After December 1988, archival documents stop referring to the joint design office. As one interviewee put it, ‘some plans just fell through’,533 In its all vagueness and obscurity, this explanation after all may be the most accurate.

Considering that the Soviet economic priorities were industrial modernisation and expanding exports, Wärtsilä’s initiative for a joint ship design office was a very good plan. It was everything that had been called for in the bilateral agreements, plans, and programmes. It could have had an economic rationale. The shipyards in Finland today cooperate with the Russian shipbuilding companies. The fact that the project failed makes the initiative an interesting example of how companies tried to adapt to the major transformations of the future based on the experience from the past.

4.6. Conclusions

As Philip Hanson has pointed out, one of the peculiar characteristics in the Soviet technology transfer policy was that the extensive efforts to transfer and assimilate western technology were accompanied by the claim that the Soviet Union was technologically self-sufficient.534 Through the scientific, technical, and industrial cooperation, the Finnish shipyards responded simultaneously both to the Soviet Union’s need to acquire competitive technology, and to receive recognition for its own technological competence.

The Finnish shipbuilding industry practiced Soviet trade for economic reasons; the state-level bilateral framework provided the shipyards with irreplaceable opportunities to conduct stable, high-volume, and often profitable ship exporting without actually being bound to the rigidities and restrictions of bilateral trade. During the first period of the Cold War shipbuilding, the Finnish preferences of maximising the export of goods and products and minimising the transfer of knowledge was compatible with the Soviet Union’s interest in using the Finnish shipbuilding system primarily as a supplier of vessels and reparation services. Over the course of the 1970s, both Soviet and Finnish attitudes changed in a way that underlined the primacy of the reciprocal exchange of technology and technological knowledge. Through the different aspects of scientific, technical and industrial cooperation, this chapter has analysed the role of non-conventional activities as components in the Finnish Cold War shipbuilding system.

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533 Interview P. Jumppanen 23.1.2014.
First and foremost, the shipyard companies perceived this non-commercial cooperation as a part of marketing to an authoritarian, centrally planned economy. A positive approach to scientific and technical cooperation smoothed over the ideological discomfort the dedicated Communists felt towards capitalist big business, especially at the beginning of the Cold War. Whereas the state level agreements, protocols, and liturgies manifested the peaceful co-existence of countries with different economic systems, industrial cooperation projects made the rhetoric concrete and personal.

Building trust between Finland and the Soviet Union through strengthening the formal and informal connections established the strong foothold of the Finnish shipbuilding industry in the Soviet Union. Trust between partners decreased transaction costs and risks in future-oriented planning—even when the trust was merely rhetorical and the state-level friendship merely a performance. The special flavour of the Finnish-Soviet partnership came from the fact that the Finnish shipyards built trust not only with other business partners, companies and organisations, but also with the political leadership and bureaucracy.

At the corporate level, active participation in cooperation projects provided opportunities to create useful business contacts with the Soviet decision-makers and to render a Soviet-friendly company brand. The Finnish ship sellers recognised the Soviet desire for technological prestige. While they certainly looked down on the quality of Soviet technology, Finnish companies also understood the value of standing out against the western businessmen who addressed the Soviet industry with a mixture of pity and condescension. The Finnish shipyards did not buy Soviet cars to carry people. They bought them to gain political capital while nurturing Soviet technological self-esteem.

The amount of time and money the big shipbuilding corporation invested in this kind of image marketing among the Soviet political hierarchy depicts how tightly the Finnish shipbuilding industry was intermingled with the Finnish-Soviet state relations. As a general trend, the more difficult it was to do business with the Soviet, the more interested the Finns were in intensifying their extra-curricular activities. Import trading, scientific and technical cooperation, and joint ventures exemplified how the Finnish shipyards became ready to shift from their commercial role as ship exporters into active contributors to technology transfer and development in order to nurture their privileged position in the Soviet Union.

This chapter has also mirrored the fuzzy logic and vague information of technological decision-making in the Soviet planning economy. Instead of purely economic and technical evaluations, a diverse set of political and personal factors could provide a significant advantage in negotiations. A typical Finnish reaction to the growing Soviet pressure was not to back up, but to move closer. Keeping the Soviet decision-makers close enough to shake their hands, the
Finns attempted and sometimes succeeded in translating the Soviet dictates into a dialogue. Even though the institutions of the scientific and technical cooperation were dictated by the Soviet Union, the Finnish shipyards learned to apply them to negotiate the Soviet demand.

This hand-shaking strategy was also a characteristic of the disintegration of the Finnish Cold War shipbuilding system. When western competition, Soviet economic difficulties, and political ramifications challenged the Finnish privileged position as the prime purveyor of special-purpose vessels for the Soviet Arctic, the Finnish shipbuilding system reacted by increasing rather than decreasing its engagements in the Soviet Union.

From the Finnish point of view, scientific, technical and industrial collaboration constituted essential elements in the Cold War technopolitical practices. It is worth noting, however, that technopolitics never was solely political; by definition it also has material consequences. The techno-scientific results of the Cold War technopolitics, such as the Arctic maritime technology products, understanding of ice mechanics, and established scientific research networks, withstood the dissolution of the Cold War shipbuilding system and formed one of the building blocks of post-Cold War shipbuilding in Finland.

The Finnish-Soviet bilateral clearing trade and payment system is widely used as a synonym for the profitable, continuous and stable trade. This chapter approaches the structure and style of the Finnish Cold War techno-economic shipbuilding system from the point of view of the trade infrastructure and examines how institutions promoted the Finnish techno-economic shipbuilding system within the turbulent economic environment. The clearing trade and payment system was the single most important element that contributed to the distinct developmental trajectory the Finnish shipbuilding industry followed after the oil crisis.

This chapter responds to the second research objective by investigating the relationship between state and industry from the point of view of the clearing trade administration. It highlights the decisive role of the bureaucracy as an active and political actor. The bilateral clearing trade and payment system as a set of bilateral technical arrangements constituted merely the technical infrastructure. Besides the clearing system, it was essentially the favourable managerial practices that gave the shipbuilding system extra momentum in state-level decisions.

The end of the clearing trade in 1990 marked the most tangible end-point for the Finnish-Soviet Cold War trade in the retrospective accounts. For instance, the longstanding director of Wärtsilä Tankmar Horn connected the decline of Finnish shipbuilding and the clearing system, and publicly accused President Koivisto and the state administration of abandoning clearing: ‘It was wrong to break down the clearing system on [Finland’s] own initiative’.

Through the examination of the end of the clearing trade, this chapter provides insight into the dismantling of the Cold War shipbuilding system. The technopolitical functions the actors of the Finnish shipbuilding system associated with the clearing system, and the actual function it had, were not entirely unrelated—but not directly connected either. The ideas the actors had about the profitability of clearing trade preserved longer than the benefits the clearing system was able to provide.

5.1. Atypical time for prosperity, 1975–1980

Finnish shipbuilding was an exception in the post-oil crisis Europe. The figure below illustrates how the Western European ship production plummeted after the first oil crisis in the first half of the 1970s. The Finnish shipbuilding production continued growing and peaked only in 1981 in terms of production capacity and workforce.

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From the mid-1970s to the mid-1980s, the Finnish shipyards continued to depend on the Soviet trade, but not as totally as they did in the 1950s. Figure 23 shows how a significant amount of tonnage was built for Western and domestic markets alongside the Soviet orders. The biggest privately-owned shipyards of Wärtsilä and Rauma-Repola in particular made continuous efforts to win bids outside the bilateral trade framework. Nevertheless, the bilateral Soviet trade was of paramount importance as it provided the basic load for the production units, flexibility in scheduling, advantageous financing, and room for negotiation in pricing.
Over the course of a short period of time in the mid-1970s, Finnish-Soviet shipbuilding was a mature system that contained all the elements the Finnish Cold War ship trade is still known for. It provided reliable future expectations, counter-cyclical impacts, and lucrative revenues. At the same time, the general trend towards liberalisation and deregulation in Finland’s western economic relations widened the gap between bilateral and multilateral trade. Gradually, it turned the centrally coordinated Finnish-Soviet clearing administration ‘into an insulated island in the midst of an increasingly deregulated foreign exchange administration.’

The oil crisis, which was a tragedy for most West-European shipbuilders and all oil-importing countries, fuelled positive development at the Finnish shipyards and strengthened the Finnish trust in the bilateral clearing trade. As the majority of the Finnish imports from the Soviet Union consisted of crude oil, the hike in oil prices boosted Soviet purchasing power from Finland. The logic of bilateral clearing required the imports and exports being in balance.

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Thus, when oil prices peaked and multiplied the value of the Finnish imports from the Soviet Union, it permitted the Finnish exports to the Soviet Union to increase as well. Like other energy importing countries, the Finnish economy suffered from growing energy expenses. Unlike the others, Finland was able to pay the bill by increasing its selling to the Soviet Union, almost automatically and without competition.

The Finnish shipbuilding companies, like other Finnish Soviet-exporting companies, tried to maximise their own share of these extra export opportunities. Immediately, the oil hike increased exports of products with a relatively short time of delivery, such as consumer goods and machinery (Figure 24). The Soviet interest in consumer goods increased, but the shipbuilding industry continued enjoying a privileged position. The Long-Term Programme (PAO) in 1977 outlined that the Finnish-Soviet ship trade was to grow between 13% and 33% in every 5-year period until 1990. In 1981, the trade quotas for bilateral ship exports were further expanded. In retrospect, it seems quite paradoxical that the oil crisis, which demonstrated the straightforward connection between the Finnish-Soviet trade balance and the fluctuation of international market prices, actually strengthened the contemporary illusion of the Soviet trade being insulated from global insecurities.

538 BoF/KH (Kari Holopainen on Finnish-Soviet trade prospects 30.1.1980, f. 45 “Lisävientineuvottelut 1980”, c. Eastern trade department (Idänkaupan osasto, IO), SPA; Chair of STTY Pentti Helpio on current issues in shipbuilding industry in the shipbuilding and shipping seminar 28.11.1979, STTY 1, ELKA.

539 From SUR1.2 billion in 1976-1980 to 1.6-1.8 billion in 1986–1990. Pitkän ajanjakson ohjelma kaupallis-taloudellisen, teollisen ja tieteellis-teknisen yhteistyön kehittämiseksi ja syventämiseksi Suomen ja SNTLn välillä vuoteen 1990” (Long-Term program on the development and intensification of the economic-technical and scientific-technical cooperation between Finland and the USSR), SopS 54/1977.

Even though the value of the Finnish oil import occasionally exceeded the value of the Finnish exports, the clearing debt was not a political issue. Instead of the Finnish trade deficit, the Soviet officials were concerned with the Soviet Union being only the third-largest trading partner for Finland after Sweden and the UK.\textsuperscript{541}

In addition to the oil price effect, the Finnish-Soviet bilateral clearing trade system contained a further element that had the potential to increase fluctuation but was widely credited with stability—the five-year planning cycles. The Soviet organisations usually ordered the majority of vessels at the beginning of the five-year term. That resulted in a visible ebbs and flows in the Finnish ship order books. In the mid 1970s, this was usually not a major problem. In fact, the Finnish shipyards were often able to schedule the Soviet orders alongside the western orders that usually had tighter delivery times, and thereby gain some counter-cyclical protection against the international fluctuations.

As a result of these real and imagined effects combined, the Finnish political and industrial actors praised in concert the profitability and stability of the clearing trade and its benefits to shipbuilding. The Chapter 4 showed how the Finnish public praise for industrial cooperation with the Soviet Union was in a strict contrast with its criticism in private, but this was not the case with clearing. The Finnish fondness for the clearing trade and payment system was not

\textsuperscript{541} PM 59 KPO/Erkki Tiilikainen minutes from a discussion on Finnish-Soviet trade 1980, 24.1.1980, folder Ef 122 "Idänkauppakeskustelija," signum 4979, SPA.
just a matter of public form. The Finnish industry advocated strongly the continuation of the bilateral clearing trade also in their statements to the Bank of Finland in the 1970s.542 Once in a while, also the Finnish politicians expressed their appreciation for bilateralism to a greater extent than their Soviet counterparts.543 In the sixth and seventh five-year plans (1976–80 and 1981–1995), the continuation of the clearing trade and payment system was specified only at the special request of the Finnish party.544

In the Cold War dichotomy between market economies and planning economies, the clearing trade system was strongly associated with socialist trade. After the post-war reconstruction period, it remained in use mainly among CMEA countries. Yet strict bilateralism did not appear as an ideological obligation for socialist trade. Since the 1970s, Finland had experimentally used convertible currencies in its trade with Poland and Czechoslovakia. At the beginning of the 1980s, Finland had shifted to the use of convertible currencies in almost all other Communist countries apart from the Soviet Union. The Bank of Finland also refused to open new clearing accounts with Mongolia and North Korea.545 Only in the Finnish trade with the Soviet Union had the clearing system become a fundamental cornerstone of economic cooperation.

From a purely financial perspective, the Soviet foreign trade officials would have had clear incentives to prefer convertible currencies in their trade with Finland, especially when the oil price remained high. That the Soviet negotiators accepted the continuation of clearing payments suggests that the bilateralism was not without political, economic, and technical value from their point of view.

The technopolitical function of the clearing system as the fundamental stabilizer of the Finnish shipbuilding gained momentum after the oil crisis. The clearing trade was, as succinctly put by Pekka Sutela, a ‘vehicle for implementing politically ordered priorities’.546 The clearing trade and payment system was not a tangible object but an institutional arrangement, but like any large construction, it had the potential to facilitate transactions, steer the development, and create connections. In this fashion, too, the clearing institutions constituted the most

profound technopolitical infrastructure in the Finnish Cold War shipbuilding system. As President Kekkonen highlighted in his speech at the Kremlin in 1980, the continuously developing economic interaction constituted an essential building block of good neighbourly relations.547 Whether the audience believed the rhetoric of peaceful co-existence or not, it was clear to all that the bilateral trade system was built on the firm foundation of Finnish-Soviet state-level affairs. Thus, it would not oscillate as a ‘pointer of the barometer of the international situation.’548

5.2. Ship trade as a political trump card, 1981–1982

The first half of the 1980s marked a gradual, almost invisible, turn from personal political endeavours to faceless technocracy in the management of the Finnish-Soviet bilateral trade. The critical challenges the Finnish shipbuilding industry faced during that period were monetary rather than strategic in their nature and the problem-solving took place in administrative offices rather than political cabinets.

The first clear milestone in this change was the presidential transition in 1981–1982. Chapter 3 described how Urho Kekkonen established his position as the personification of the Finnish-Soviet special relationship during his quarter-century in office. When the prospects of Finnish-Soviet economic cooperation had been at their height in the 1970s, Kekkonen had personally engaged in the bilateral trade exchange. He had initiated massive cooperative construction projects by the Finnish border, pushed a button with the Soviet statesman Alexei Kosygin to launch the Finnish-Soviet nuclear power plant in Loviisa in 1977, and he had mediated important shipbuilding deals. The directors of Finnish shipbuilding companies, especially Tankmar Horn of Wärtsilä and director of Valmet Olavi Mattila had uncomplicated and even close relationships with the president.549

The health of President Kekkonen deteriorated in the fall of 1981. Eastern-oriented businessmen, Horn included, advocated strongly for Ahti Karjalainen to step into Kekkonen’s

547 President Kekkonen’s speech during a dinner in Kremlin 12.11.1980. The Digital Collection of Urho Kekkonen’s writings, the National Library of Finland.


549 President Kekkonen’s correspondence includes several examples of both Horn and Mattila contacting the President and asking for assistance with the Soviets. For example see, Olavi Mattila’s PM 28.8.1978 and a cover letter 6.9.1978 to Kekkonen on ship contracts to Valmet Vuosaari shipyard to support employment, folder 22/40, UKA. For Horn, the connection was thanks to his former high-profile career in the Ministry of Foreign Affairs where he had reported directly to the Minister of Foreign Affairs Ahti Karjalainen and President Kekkonen, whereas Mattila owed this connection to their shared interests in sports and his diplomatic career. Jyrki Vesikansa, "Horn, Tankmar (1924–2018)," Kansallisbiografia (digital database), (Helsinki: SKS, 2014); Jyrki Vesikansa, Olavi J. Mattila (1918–2013), Kansallisbiografia (Helsinki: SKS, 2013).
boots. Karjalainen was seen as the choice of the Kremlin and a guarantee of continuity in Finnish-Soviet relations. Additionally, he came from a non-socialist party.\textsuperscript{550}

The front-runner in the coming presidential elections, however, was the social democrat Prime Minister Mauno Koivisto (1923–2017). Koivisto was one of the few Finnish politicians who had actual work experience at a ship dock but otherwise he was something of an enigma to the shipbuilding leaders.\textsuperscript{551} Koivisto was an economist with broad interests in political and macro-economic questions and was devoted to dealing with economic instability. Compared to Kekkonen, who enjoyed being in the spotlight and did not hesitate to use his personal contacts to intervene in private business, Koivisto appeared as a pragmatic technocrat with a formal and distant relationship with the members of the Finnish business elite.\textsuperscript{552}

As Maiju Wuokko has demonstrated, the person and personality of the coming president was inextricably interwoven with the future prospects of the Finnish-Soviet trade. How strongly the Soviet leadership actually favoured Karjalainen over Koivisto is uncertain. Nevertheless, the fact that so many of the Finnish political and economic elite anticipated this support, characterised the presidential elections and demonstrated the political weight of the Soviet trade in the Finnish domestic and foreign affairs.\textsuperscript{553}

When President Kekkonen took a medical leave on September 1981, that triggered widespread speculation that he would not return and launched an unofficial presidential campaign. The current Foreign Minister, a controversial career-politician Paavo Väyrynen, had a meeting with a Soviet diplomat Viktor Vladimirov in which they discussed the possibility of using bilateral trade as a political tool to support the pro-Soviet candidate Karjalainen, as had happened in 1956 but ‘clearly more carefully’ because the social democrat Koivisto could hardly be regarded as an anti-socialist.\textsuperscript{554}

Väyrynen described in his letter to Karjalainen his meeting with Vladimirov:

\textsuperscript{551} Koivisto’s PhD in sociology examined labor relations in Turku harbour and before his studies, he had worked at Laivateollisuus shipyard for a short period.
\textsuperscript{553} Wuokko, \textit{Markkinatalouden etujoukot}, 2016, 181, 184.
Viktor asked me what the Soviet Union could do for Karjalainen. He thought himself that there could be a slow season in the Finnish-Soviet trade in order not to give Koivisto extra support. In addition, there could be a problem with the economic cooperation, which would provide a possibility to highlight your [Karjalainen’s] competence. I suggested that the trade agenda for the coming year would be suitable for that purpose, if we found a way, for example to increase the oil import, to solve the problem.  

The slow season in the Eastern trade did not materialise—rather the opposite. The entire fall of 1981 had been a hectic time for the shipyard managers, who were kept shaking hands over new contracts with the Soviet organisations. The boom culminated just in advance of the elections at the beginning of 1982. 

Karjalainen brought the Väyrynen-Vladimirov scheme to the public in his memoirs in 1989. Even though the original plan had been to hamper trade instead of support it, the revelation sparked widespread conjectures that the shipbuilding boom of 1981 was actually a carefully orchestrated makeover to influence the elections by attracting the business elite’s support for Karjalainen. 

The bilateral ship trade was undeniably an urgent political question in the 1982 presidential elections. Nevertheless, archival records provide no support for the conjecture that Väyrynen would have been able to organise the high tide in shipbuilding for political ends: The upswing in ship contracts had already been anticipated in the first half of the year when Kekkonen still had a firm hold on his office. Instead of a trade game to win the presidential seat, interesting here is how promptly the Finnish audience was ready to interpret the ups and downs of the Finnish-Soviet ship trade as the results of political manoeuvring. The bilateral trade was clearly and widely seen as a technopolitical tool—even when it was not applied as such.

5.3. Creating an illusion of balance, 1982–1985

In the early 1980s, the oil price remained high but the value of the Soviet imports from Finland grew faster than that of the Finnish imports from the Soviet Union. The Soviet surplus on the
clearing account turned into deficit. In August 1981, the Soviet deficit on the clearing account reached a new peak at SUR838 million.\footnote{Holopainen, Orpo piru, 2007, 134-135.}

Afterwards, the Bank of Finland director of the Eastern Trade Department, Kari Holopainen, recalled 1981 as a turning point in the bilateral trade. After 1981, the structural imbalance started to impede the development of Finnish trade with the Soviet Union. As an early signal of growing imbalance, Holopainen received an invitation to a recreational fishing trip organised by Wärtsilä for the Soviet foreign trade delegation before the annual trade protocol negotiation in Helsinki. The Bank of Finland civil servants were not usually invited to these kinds of networking events. Therefore, the invitation foreshadowed that the shipbuilding industry had encountered the kinds of problems they hoped the Bank of Finland could solve.\footnote{Holopainen, Orpo piru, 2007, 130-131.}

This particular trip is also emblematic as an illustration of the wider shift. If pictures of President Kekkonen telling fishing yarns with Soviet leaders on board icebreakers depicted the golden years of the Finnish-Soviet trade, Holopainen’s description of civil servants fishing for cod in sleet and slush would illustrate the clearing trade management in the first half of the 1980s.

The clearing deficit strikingly exceeded the accepted credit limit agreed in the Finnish-Soviet protocols. The chronic imbalance increased the risk that the Licence Office would deny export licences from Finnish ships until the Soviet clearing account had funds to pay for the purchases. That risk loomed large at the shipyards. Metal engineering and ships comprised almost half (46%) of the Finnish total exports in 1982. Besides, the prepayment for ships totalled over FIM600 million, which totalled 75% of the metal export, further deepening the Soviet deficit.\footnote{PM 748 KPO/Repo on Finnish-Soviet trade protocol 1982 16.12.1981, f. “Suomi-NL 1981-1982, TVPK:t”, signum 3279, SPA.} At this point, the public despair exceeded the administrative concerns; the newspapers speculated on the reduction of trade quotas by 20% while Bank of Finland estimates ranged between 5% and 7%.\footnote{Record on Trade political working group (Kauppapolitiikan neuvotteluryhmä) meeting 27.5.1982, f. “Suomi-NL 1981-1982, TVPK:t,” signum 3279, SPA.}

The Finnish-Soviet governments had specified mechanisms for balancing the clearing accounts by using convertible currencies. In practice, this was never applied. Instead, the banks had compensated the temporary clearing deficit by themselves. That meant that the Bank of Finland and VEB granted credit to the other party with no means to protect its loan against the fluctuation of exchange rates or inflation. Every time the Bank of Finland transferred payments for a Finnish shipyard crediting the Soviet clearing account without a sufficient balance, the Finnish economy indirectly provided the Finnish-Soviet ship trade
interest-free financing.\textsuperscript{562} As mentioned in Chapter 2, this flexibility had become a part of the special practices of the Finnish-Soviet bilateral trade, and were justified by friendly relations: ‘it is obvious that the cooperation between Finland and the Soviet Union is not jurisprudence’.\textsuperscript{563}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure25.png}
\caption{Balance of the Finnish-Soviet clearing account in the Bank of Finland, monthly average in SUR (blue) and the auxiliary account (red). The grey lines present the official credit limit. According to the logic of bilateral clearing, the better the trade exchange was balanced, the closer to zero the balance should be. Data: Bank of Finland.}
\end{figure}

According to the civil servants in the Bank of Finland Eastern Trade Department, the prime reason for the growing imbalance was the lack of control in the Soviet Union: the Soviet administration had no longer control over foreign trade in the way they had before. Instead, they allowed the FTOs to import more than they could afford.\textsuperscript{564}

However, the lack of political control in the Soviet Union alone does not explain why the Finnish-Soviet bilateral political-economic exchange had increasing difficulties in finding the

\textsuperscript{562} Kuusterä & Tarkka, \textit{Suomen Pankki 200 vuotta II. Parlamentin pankki}, 2012, 476.

\textsuperscript{563} ”On selvää, ettei Suomen ja Neuvostoliiton välinen yhteistyö ole juristeria.” PM SP 6.7.1984 on working group for the Soviet 5-year negotiations 3.7.1984, f. 56, SPA.

balance. The reasons for the unrestrained upsurge of the Soviet deficit needs to be evaluated as a part of the Finnish-Soviet techno-economic shipbuilding system.

Thanks to the well-established technopolitical meaning of the Finnish-Soviet ship trade as a showcase of Finnish-Soviet peaceful coexistence, no politician wanted to restrict the ship export but rather promote it. The Soviet Deputy Prime Minister Manzhulov agreed with the Finns that especially ‘the metal sector should not be bothered with these problems’.565

There were no political rewards available for those who rejected export licences in the Soviet trade and in so doing endangered thousands of jobs. Åke Wihtol, an under-secretary in the Ministry of Foreign Affairs Trade Political Department, acknowledged to his Soviet colleague in 1982 that withdrawing export licences would stand in a drastic contrast to the ‘spirit of the Finnish-Soviet trade’. As a contrast, in the Finnish discussions, he had previously supported those reductions to the Finnish-Soviet trade.566

While the Finnish-Soviet trade protocols and agreements were mainly the Foreign Ministry’s playing field, the Bank of Finland was not indifferent to industrial development. The central bank was rather motivated to solve current imbalances without hampering political priorities: the Finnish-Soviet relations, employment, and positive development of export industries. The political and administrative tools available to balance the bilateral payments, however, were insufficient to deal with rapid fluctuation. The prime instrument in controlling the bilateral exchange, the five-year agreements and annual protocols, explicated the volume of goods and services crossing borders, not their values nor the schedule of capital flows. In addition, because the construction times were long, the shipyards customarily confirmed ship contracts before the bilateral state-level trade negotiations. Referring to the Long-Term Programme, the shipyards trusted that the contracts would be included in the protocols afterwards.

In 1982, Minister Esko Rekola sent a letter to the Federation of Metal Industries appealing for it to collect accurate and up-to-date information of all planned, negotiated, and confirmed contracts and terms of payments, and keep the Ministry updated of any changes. This was of high importance for the Ministry to be able to control the balance of the trade, and as underlined, also concerned the shipyards.567 This kind of a letter from a minister might have caused uncomfortable feelings at the shipyards but otherwise it imposed no sanctions.


567 UM21151 Esko Rekola & Åke Wihtol to Metalliteollisuuden Keskusliitto 17.2.1982 on project and
During this post-Kekkonen period in the Finnish-Soviet trade, when governmental tools to balance the bilateral trade appeared politically and practically inappropriate, the Bank of Finland made itself into a central agent shaping the possibilities and challenges of Cold War shipbuilding. It applied methods that were a great deal more variable and creative than the traditional tool-box of central banks, and introduced procedures to artificially balance the clearing account.

The first measure was to move SUR300 million (FIM2.2 billion) from the interest-free clearing account to an interest-bearing ‘Special account’ (*erityistili* or *erikoistili*), which posed strict limits for interest rates and required amortisation. Talking about money was seemingly uncomfortable for the leading Finnish-Soviet politicians. When discussing the special account with his Soviet colleague Manzhulov, Ahti Karjalainen underlined that in the friendly relationship ‘payments were somewhat secondary […] With this account-idea we would build a bridge for us to proceed towards the balanced situation’.

The special account did not solve the fundamental discrepancy of the Finnish-Soviet exchange. It did help, though, the Bank of Finland to hedge the clearing deficit against inflation and exchange rate movements without having to embarrass the Soviet Union by asking for convertible currencies. For the shipyards, this arrangement meant that when they received prepayments for the Soviet ship-orders, it was actually credit paid by the Bank of Finland and guaranteed by the Soviet Union.

Another measure was to artificially increase the value of the Soviet energy imports to Finland, which could absorb no more Soviet oil. The transit oil arrangement (*välitysöljy*) referred to a Finnish-Soviet transaction of transferring oil from third countries via Finland. The Finnish state-owned oil company Neste purchased Libyan oil at the OPEC price and resold it abroad in smaller shipments in current spot-prices. This was a curious arrangement. It brought large shipments of oil that never arrived in the Soviet Union or in Finland to the Finnish-Soviet bilateral exchange of goods. It also indirectly engaged neutral Finland in the Soviet-Libyan arms trade. Moreover, this arrangement constituted a rare exception in business history as a successful affair that was carried through by buying oil at higher prices and reselling it at lower prices. The Bank of Finland compensated Neste to offset the difference, providing Neste with clearing roubles at discount prices.

ship exports to the Soviet Union, f. 2, STTY, ELKA.


569 PM 497 KPO/Inki on the visit of Deputy Minister Manzhulo in Helsinki 20.-24.9.1983, 19.9.1983, f. 50 “TVPK 83 yms”, signum 4741, SPA.
Between 1982 and 1984, the value of the transit oil totalled SUR760 million (FIM5.3 billion). The Bank of Finland paid FIM175 million for the arrangement. Director of the Eastern Trade Department Holopainen was not unconditionally pleased with these manoeuvres because the transit oil arrangement forced the Bank of Finland and Neste to carry increased business risk for political reasons. Yet both the Ministry of Foreign Affairs and the Bank of Finland evaluated that the transit oil was a beneficial addition to the Finnish economy as a whole because it enabled continuous exports without having to delay already contracted ship orders.

Figure 26: The oil import in the Finnish-Soviet clearing trade (tons). Data: Bank of Finland.

The special account and the transfer oil arrangements illustrated the diverse ways the Finnish governmental institutions employed to maintain the Finnish ship exports to the Soviet Union. The third example of the political agency of the clearing trade administration was its involvement in the re-negotiation of the ship payment schedules in the Finnish-Soviet trade; the Finnish ship contracts were effectively applied as an instrument of monetary policy.

570 Kari Holopainen/BoF to minister Jermu Laine/KTM 21.9.1983, f. 50 "TVPK 83 yms", signum 4741, SPA.
As Chapter 2 described, prepayments in cash was among the greatest benefits of the clearing trade. They were a considerable advantage in comparisons with the credit-based terms of payment in international shipbuilding, in which only 15% to 20% of the contract price was due on delivery, the rest being credit for five to eight years. For the Finnish economy, the prepayments enabled high-volume capital-intensive production without putting extra pressure on the tight domestic financing markets or requiring the increase of foreign debts.

In 1978, the customary payment schedule in the Finnish-Soviet trade—25% when the contract was signed, 25% when the keel was laid, 25% when the vessel was launched, and 25% when the ship was handed over to the customer—was delayed for a limited time with a 10-25-40-25 distribution of payments. At the beginning of the Five-year period of 1981–1985, the traditional 4x25% payment schedule was re-established.

The Soviet party raised the ship pre-payments onto the agenda of the Finnish-Soviet trade negotiations again in 1981. Bank of Finland conversation minutes from a Finnish-Soviet meeting reported how a Soviet official named Tomkovich brought up the issue ‘initially as a joke’. According to Tomkovich, ‘the prepayments hampered Finnish monetary policy, facilitated inflation, worsened the position of Finnish workers and made the shipyards a beneficiary of unjust enrichment’. Finnish official Ilkka Vasara replied that the Bank of Finland had not recently studied the impact of the ship payments but that ‘this message will be presented to the Bank directorate’.

What the he did not tell the Soviets was that the Bank of Finland civil servants were not entirely positive about the extensive prepayments. The problem was not the pre-delivery financing as such, but rather the front-heavy prepayment schedule that functioned as a source of unregulated capital flow. Thanks to the prepayments that were generated faster than the expenses of construction, shipyards came into possession of liquid capital that, when re-invested, fuelled grey financing markets and ultimately inflation.

The actual knowledge the civil servants had of the cost-accumulation in shipbuilding appeared to be quite imprecise. According to a memorandum that was meant to explain the prepayment schedule ‘the new contracts have been based on the traditional payment schedule: 25% when

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573 PM Soviet export financing working group, on pre-delivery financing 17.4.1978, folder 127 documents concerning ship export, signum 4986, SPA.

the contract is signed, 25% who-knows-when, 25% do not remember, 25% at the delivery.’ Yet the bank had a pretty strong apprehension that the prepayments constituted a serious threat for monetary market stability beyond the Bank’s control. The Bank evaluated that a moderately tail-heavy payment schedule, such as a distribution of 10-20-20-50, corresponded better to the cost-accumulation.

Thus, when Manzhulov made the first official initiative for revision of ship payments at his meeting with Foreign Ministry civil servant Åke Wihtol in 1983, it also served the Bank of Finland’s monetary policy goals. Instead of the traditional 4x25% payments, the Finnish shipyards would receive a maximum of 15-20% of the fee during the construction and the rest at the delivery. With this modification, the Soviet Union wanted to address the imbalance of the clearing account. Presumably, they had also received much better terms of payments in trade with other Western countries and were motivated to disclose the exceptionally good terms the Finns were enjoying.

The Finnish shipyards naturally protested the new payment schedule by stating that increasing costs in financing would only harm the Soviets through increased prices. Director of the Federation of the Finnish Metal Industries Harri Malmberg visited the Bank of Finland asking for the Bank’s support for shipyards’ financing problems. The Eastern Trade Department evaluated that shipyards exaggerated their financing problems. In overall, the civil servants were reluctant to offset the costs of delayed payments by using public funds or foreign credits because it would only increase monetary instability. As a compromise the

577 PM BoF on financing in the ship and project export to the Soviet Union 21.4.1983, f. 50 “TVPK 83 yms”, signum 4741, SPA.
578 PM BoF on financing in the ship and project export to the Soviet Union 21.4.1983, f. 50 “TVPK 83 yms”, signum 4741, SPA; Minutes from shipyard committee meeting 1.11.1983, f. “JS Telakkatoimikunta 327,” UPMA; Minutes from a meeting of Koivisto and Sorsa 9.1.1987, Koivisto 33, NA.
Bank of Finland Board of Directors allowed the shipyards to get 40% of pre-delivery financing as a foreign loan.\textsuperscript{583}

The Bank of Finland had a tactical rationale for its strict policy towards shipyards. The Central Bank anticipated that the shipbuilding industry would increase its demands for better financing schemes in the future: ‘It is completely possible that the shipyard industry will turn to the Bank of Finland at the end of this decade hoping for subsidies for Western exports and domestic trade on the grounds of experienced difficulties. To put it simply: Is it reasonable to go to a permanent subsidy policy already and with these reasons?’\textsuperscript{584}

The outcry of the Finnish shipbuilding industry against the new payment schedule was in vain. The shipyards had few advantages in contract negotiations with the Soviets. Concerned about increasing Western competition in the Soviet markets, the Finnish negotiators accepted the delayed payment schedule in pre-delivery financing in order not to provoke the Soviets to claim similar post-delivery financing schemes it received from other Western countries as well.\textsuperscript{585}

Afterwards, the Finnish shipbuilding historians interpreted the corroded terms of ship payments in the early 1980s merely as a result of increasing western competition and rising economic awareness in the Soviet Union.\textsuperscript{586} Even though these factors may have triggered the Soviet initiative to re-schedule the ship payments, it is crucial to understand that the ship payments also served a purpose in the Finnish monetary policy and bilateral trade administration.

In the early 1980s, not even the Bank of Finland economists, who were critical towards arrangements that diverged the trade system from the principles of market capitalism, expressed their concerns in public. The Central Bank had clear instructions on how its employees should discuss the clearing imbalance. Officially, the temporary fluctuation was


\textsuperscript{585} The Finnish shipyards suggested terms of payments in which 40% of the contract price would be paid during the construction and 60% at the delivery. The Soviets stuck out for a distribution of 20-80. PM BoF on financing in the ship and project export to the Soviet Union 21.4.1983, f. “50 TVPK 83 yms”, signum 4741, SPA; PM BoF/K.Holopainen on meeting on changes in the Finnish-Soviet ship payments 16.6.1983, PM 497 KPO/Inki on the visit of Deputy Minister Manzhuolo in Helsinki 20.-24.9.1983, 19.9.1983, folder 50 TVPK 83 yms, signum 4741, SPA.

\textsuperscript{586} Uola, \textit{Meidän isä on töissä telakalla}, 1996, 460-461.
only a natural result of the high volume of the Soviet trade. All details of special arrangements were treated as bank secrets.\textsuperscript{587} Instead, the advantages of the bilateral clearing trade was justified with statistical time-series: clearing-based Finnish-Soviet trade had grown substantially faster compared to Finnish foreign trade in general.\textsuperscript{588}

Holopainen ended his article on the Finnish-Soviet trade system in 1982 by noting that ‘the development of the trade has been essentially influenced by how the system has been administered in practice.’\textsuperscript{589} This notion, which gently disputed the role of the clearing trade and payment system as the solid foundation for endlessly expanding Finnish-Soviet trade as it attributed the trade success to the administrative practices, was about as harsh as criticism of the clearing trade and payment system got in the early 1980s Finland.

The growing discrepancy between politically approved plans and economic realities pushed the Finnish-Soviet clearing trade off balance in the early 1980s. The imbalance engaged the Bank of Finland in several special arrangements to recreate the illusion of harmonious bilateralism.\textsuperscript{590} The measures performed as expected for a short period in 1984 and 1985, when the oil price remained high. In 1986, the value of the Soviet imports dropped rapidly due to the increasing supply of oil and the decreasing exchange value of US dollar.\textsuperscript{591} Even though the bilateralism of the Finnish-Soviet trade had been occasionally discussed since the 1960s, only now did the collapse of oil price trigger the first serious polemic of the continuation of the Finnish-Soviet clearing.

\textsuperscript{587} Note BoF/K.Nars 4.11.1982 on communication concerning the Finnish-Soviet special account; Note BoF/K.Nars 10.11.1982 on communication concerning the Finnish-Soviet special account to outsiders, f. 50” TVPK 83 yms”, signum 4741, SPA.
\textsuperscript{588} Kauppapolitiikka 1-2/84.
\textsuperscript{589} ”[K]aupan kehitykseen on olennaisesti vaikuttanut se, kuinka järjestelmää on käytännössä sovellettu.” Holopainen, ”Suomen ja Neuvostoliiton välisen kaupan toimintaperiaatteet,” 1981, 325.
\textsuperscript{590} PM IO/Holopainen on the role of Bank of Finland in the Finnish-Soviet trade 15.9.1982, f. Ef 122 ”Idänkauppakeskustelua,” signum 4979, SPA.
\textsuperscript{591} Kuusterä & Tarkka, Suomen Pankki 200 vuotta II. Parlamentin pankki, 2012, 522.
From 1986 to 1988, the value of the Soviet imports covered only 75% of the Finnish exports to the Soviet Union. In this situation, the traditional flexibility of the clearing trade administration became an increasingly expensive economic problem. In the mid-1980s, the interest-free credit for the Soviet buyers through the clearing account totalled 17% of the Finnish total exports to the Soviet Union: The Finnish economy was financing the Soviet economy.

Fixing the problem by adjusting the trade exchange was a political problem. Neste already imported all the oil Finland could possibly absorb, and additionally resold Libyan transit oil on behalf of the Soviet Union. Preventing Finnish companies from exporting already-contracted and partly-manufactured goods to the Soviet Union was expected to cause bankruptcies in Finland. In addition, the Soviet Union could have interpreted Finnish restrictions to Soviet trade as the result of political ramifications. Increasing imports from the Soviet Union was difficult due to the lack of interest in other Soviet goods.

The oil price provided a suitable excuse to address the imparity of the bilateral exports and imports, as it was external to the Finnish-Soviet relations. At the beginning, the discussion on

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594 For careful attempts of Finnish politicians not to commit themselves in increasing Finnish-Soviet trade while not insulting Soviet products, see for example: PM UM/KPO 500 on meeting of J. Laine and B.I. Aristov in Moscow 19.9.1986, Koivisto 7; Notes UM/KPO 12.9.1986 on discussion on Soviet trade in the Prime Minister’s office 12.9.1986, Koivisto 7, NA.
the oil price overshadowed more profound processes that started to tear apart the political base of the special trade relationship.

Mikhail Gorbachev (1931-) was nominated as the General Secretary of the Communist Party and thus the leader of the Soviet Union in 1985. Succeeding a sequence of elderly men, he represented the possibility for change. He addressed the Soviet economic problems in public and launched campaigns to reconstruct Soviet political and economic culture. After Gorbachev taking office, Finnish business executives and civil servants started to report on a changing ideological climate in Moscow. *Perestroika* in the Soviet foreign trade meant devolution in industrial decision-making and the decentralisation of budget responsibility. The foreign trade priorities moved from socialist trade towards international trade with convertible currencies. The Finnish shipyards or political leaders greeted the small steps towards a more liberal and open economy in the Soviet Union not with relief but with anxiety. The past forty years of living next to the unpredictable socialist superpower had made Finland appreciate stability in political and economic relations.595

Many of the Soviet reformers took the firm stand that the clearing trade and use of convertible currencies were mutually exclusive. Technically that was untrue. Finland had made clearing arrangements based on the Finnish markka or US dollar with other socialist countries since the 1970s. Finns were worried that shipbuilding would lose its market position if the Soviet buyers had to choose between convertible currencies and bilateral trade with Finland.596 Soviet high-ranking political figures continued to invoke the crucial role of clearing as the seal of the Finnish-Soviet special relationship. However, already in the autumn of 1986, President Koivisto’s memorandum evaluated the Soviet assurances that the trade would keep expanding as outlined in bilateral agreements as ‘rhetorical rather than realistic’.597

The clearing system was still a key feature of the Finnish-Soviet relations but it was transforming from a VIP card into a handicap. Finland was exceptional, as President Koivisto reasoned in 1987, ‘the only capitalist country having a bilateral trade relationship with them,

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596 PM RR/JS 17.10.1986 reflections of the Kauppalehti symposium, f. KK 542C, UPMA; Minutes from meeting of Koivisto and Wihtol 13.2.1987, Koivisto 33, Na; Notes from VN/UAVK 13.10.1987, Koivisto 34, NA.
597 Notes UM/KPO 12.9.1986 on discussion on Soviet trade in the Prime Minister’s office 12.9.1986, Koivisto 7, NA.
otherwise [clearing] is just for trade with socialist or developing countries. This is how we, our system, is clearly a disturbing factor in their internal restructuring’.598

Little by little, cautious remarks of an incoming structural change in the Soviet trade surfaced in shipyard records. Younger-generation engineers and businessmen, who were frequently in Moscow and mingled with lower levels of Soviet administration, ministries and foreign trade organisations, brought up the possibility of a radically different horizon of expectation. For instance, Kari Ketola, the manager of the Soviet trade for the second-biggest Finnish shipbuilding company Rauma-Repola, suggested at the company strategy meeting in 1986, that it would be ‘time to retarget [our trade] a little more towards the west. However, only on the quiet. In public, the efforts towards, and the importance of, the east should be emphasised’.599

Shipbuilding companies set up working groups to monitor weak signals of transformation in the socialist bloc and to analyse their effects on the Finnish-Soviet trade. There was a consensus that some adjustments were required, but hardly any signs that the traditional partnership with the Soviet Union was on the brink of a revolutionary change.600 Change would come but ‘not in our lifetime,’ as estimated at Wärtsilä Marine.601

The administrational arrangements, the special account, transit oil, and re-scheduling ship payments, had temporarily balanced the accounts. The special arrangements worked as long as the oil price remained high and the Soviet foreign trade remained centrally controlled. In 1988, the clearing trade was difficult to coordinate because of the Soviet decentralisation and the increasing independence of the Soviet organisations. It was also increasingly expensive for the Bank of Finland, which needed to import capital to finance the deficit. At the Finnish shipyards, the clearing trade had never been so popular.

Neither President Koivisto and the Finnish foreign trade politicians nor the industrial leaders wanted to take a leap into the unknown and push the Soviet Union towards convertible currencies for fear it ‘would mean goodbye to clearing.’602 In this turbulent world, the clearing

598 “Suomi on ainoa kapitalisinen maa, jonka kanssa heillä on vielä bilateraalikauppaa, muutoin vain sosialistimaiden kanssa ja kehitysmaiden kanssa. Sillä tavalla me, tämä meidän systeemimme, on selvästi häiritsevä tekijä heidän sisäisessä kehitystyössään.” Notes from VN/UAVK 13.10.1987, Koivisto 34, NA.
599 “On korkea aika siirtää tähtäintä piirujen verran länteen. Tämä kuitenkin kaikessa hilaisuuudessa, julkisesti edelleen idän ponnisteluja, ja arvostus korkealla.” PM RR/KK for RR Strategy meeting 7.2.1986, KK (Kari Ketola) f. 542C, UPMA.
601 WM/L. Jakobsson's memorandum on the perestroika-working group 24.9.1987, WM 29, ELKA.
trade and associated intergovernmental agreements were the only tangible guarantee of future ship orders. The Finnish shipbuilding industry was well aware of the political connotations of the bilateral trade and used publicity to pressure politicians to secure the continuation of ship exports to the Soviet Union.603

This was the context in which the Soviet Union first expressed its wish to receive post-delivery financing in the Finnish ship trade. The Soviet Union made the official proposal for a credit-based financing scheme during President Koivisto’s visit to Moscow 1987.604 In international comparisons, the request was rather modest. The Soviet Union asked for similar OECD-terms of export credits that were widely available in western shipbuilding markets: 80% of the contract price for 8 years at an 8% yearly interest rate. The idea of introducing export credits in the bilateral clearing framework was not even a brand-new topic in Finnish-Soviet economic discussions; the Economic Commission had discussed it first time in 1984.605

The position of the Bank of Finland on export credits in clearing-based ship trade was strictly negative. The official rationale was that the clearing trade system should be based on the bilateral exchange of goods and services and should be balanced by adjusting the imports and exports: credit arrangements were alien to the principle of bilateralism.606 This principle resonated well with the rhetoric of mutually beneficial economic cooperation but it was technically an excuse. In the history of the Finnish-Soviet clearing trade, the Soviet Union had provided credit for Finnish project imports, for example to Rautaruukki steel factory and Valmet.607


605 PM IO/KH on credits in Finnish-Soviet trade, ”Suomen Neuvostoliiton-viennin luototus” 4.12.1985, f. ed 1 ”Muistioita Tammi-joulu 1985”, signum 256, SPA.


607 In 1966 Ahti Karjalainen, then Bank Director and Minister, had negotiated with VEB for a loan of SUR5 million for Valmet to be paid and paid back through the clearing account. Originally, the credit was a sort of supplier-credit for Valmet to deliver a sack paper factory, but it was also linked to a purchase of a floating ship dock from the Soviet Union. The payback time was extended several times making the original supplier credit more like a continuous consumer credit. Olavi Mattila’s letter and PM to Kekkonen 9.6.1966 on Valmet’s affairs to be discussed with Prime Minister Kosygin during his visit, f. year book 1966 “Vuosikirja 1966”, UKA; PM IO/I.Vasara ”Valmet Oy:n uudesta 15 miljoonan ruplan rahoituslainasta”; PM A. Saarlo 10.11.1972 ”Valmet OY:n rupaluotot”, folder Ef 1948-1978 ”SNTL/idänkaupan erityiskysymykset”, signum 10769, SPA. For other examples of the use of convertible currencies in the Eastern trade, see also: PM IO/RN Railli Nuortila 17.6.1977 ”Vaihtokelpoisissa valuotoissa otettavan rahoitusluoton käyttö sidotuissa valuotoissa maksettavan tuonnin rahoittamiseen”; PM SP/KL Kari Lottanen? 16.9.1977 ”Itä-alueen in liparahoituksesta”; PM ”Tuonnin rahoitusluottojen sääntelyyn tehostaminen” 10.1.1979, SPA.
A more comprehensive reason for the Bank of Finland to resist export credits in the Soviet trade was the risk that the credit would disturb the development of the bilateral trade; initially it would allow the Soviets to buy more products than they could afford, but when the interest and amortisations became due, they would actually diminish the export possibilities. In addition, export credits in the Soviet trade would require Finland to increase its capital import from the Western financing markets, which increased national debt and could risk the national credit rating.\(^{608}\)

Little by little, the Bank of Finland shifted its position towards a more conditional ‘no’. The principle of clearing trade being cash trade remained, but the central bank became ready to accept export credits in exceptional cases. The prime reasons were political, as Holopainen contemplated in 1985: ‘The possibility that the availability of affordable financing would significantly hamper the realisation of the bilateral ship trade cannot be completely ruled out. Difficulties in contracting [with the Soviets] become easily a “national” question. The “unreasonably” strict policy may provide an unnecessarily easy excuse to impeach the Bank of Finland for the problems [in the bilateral trade].’\(^{609}\)

In 1988, the Soviet trade organisations refused to make new orders without a possibility of post-delivery financing. In doing so, they pushed Finnish shipbuilding companies to appeal to Soviet officials and Finnish ministries to save the ship export from collapse.\(^{610}\) Finnish shipbuilding being in such urgent distress finally put enough political pressure on the Finnish government to introduce export credits to the Soviet trade. However, this took place as a result of a curious compromise over increasing flexibility and increasing control.

In the fall of 1988, Finland and the Soviet Union agreed on modifications for the clearing system.\(^{611}\) The strategic stick was to place a strict ceiling and interest rate for the clearing deficit, and to require automatic down-payments in convertible currencies. The tactical carrot was to allow Finnish Export Credit Ltd. and commercial banks to finance the export of ships and other capital goods to the Soviet Union. These export credits were to be based on the OECD terms of export credits—the same that the Finnish shipyards received in Western

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\(^{608}\) PM IO/KH on credits in the Finnish-Soviet trade 21.3.1985, f. ed 1 "Muistioita Tammi-joulu 1985", signum 256, SPA.

\(^{609}\) "Ei liene poissuljettua, etteikö kohtuuhintaisen rahoituksen saatavuus olisi merkittävä edellytys uuden runkokauden laivatoimintusten toteuttamiselle. Väikeuksista toimitussopimusten tekemisessä tulee helposti "valtakunnallinen" kysymys. Suomen Pankin "liinan" tiukka kanta antaa ehkä tarpeetoman helpon keinon leimata pankki syntyneiden ongelmien aiheuttajaksi?," Quotation marks original. PM 1DA35.1 IO/KH "Neuvostoliiton-laivaviennin valuutasaikainen rahoitus" 22.10.1985, f. ed 1 "Muistioita Tammi-joulu 1985", signum 256, SPA.


trade—and they were eligible for public guarantees from the Finnish Board of Export Guarantees.\textsuperscript{612} The state guarantees for Soviet exports rose rapidly to 30\% of the liabilities of the Finnish Board of Export Guarantees, but posed no imminent problems. The Soviet Union still enjoyed the best class ‘A’ credit rating in Finland.\textsuperscript{613}

Thus, in order to protect the clearing trade that had been beneficial for shipbuilding because of the low financing costs, Finland ended up introducing state-supported schemes for export credits. Yet at least for the majority of politicians and the public audience, this ‘comprehensive solution of the eastern trade’ confirmed the continuation of the bilateral clearing, not its end. As Minister of Trade and Industry Ilkka Suominen described to a parliamentary committee: ‘While improving the [clearing] payment system, we have been able to protect everything that is essential and long-lasting.’\textsuperscript{614}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure28.png}
\caption{Export credits granted by Finnish Export Credit Ltd (million FIM in 2004 value). The reformation of the clearing payment system in 1988 increased significantly the need for export financing in ship trade. Data: Export Credit (Suomen Vientiluotto, SVL) annual reports, Herranen (2009), 409.}
\end{figure}


\textsuperscript{613} Not until January 1990, the The Finnish Board of Export Guarantees decreased the Soviet Union’s credit rating from the best A class to the second-best B class, that was occupied with countries like Greece, Hong Kong, Kuwait, and Saudi-Arabia. This was done as an administrative decision and justified by increased country risk, economic crisis, the high share of the credits granted for the Soviet trade among the total liabilities, and the example of other Nordic countries. Statement from The Finnish Board of Export Guarantees research department (Valtiontakuukeskuksen tutkimusosasto/Taru Rintamäki) on export and investment guarantees for trade to the Soviet Union and eastern Europe, “Vienti- ja investointintakuiden myöntäminen Neuvostoliittoon ja Itä-Eurooppaan” 29.1.1990, f. Ulkomaankauppa Suomi-Neuvostoliitto 1.6.-31.10.1990’, signum 43.41, UMA; Herranen, \textit{Valtion raha vauhditti}, 2009, 271.

\textsuperscript{614}Kauppapoliittisen kokonaisratkaisun merkitystä on mahdotonta liioitella. Samalla kun kaupan
The institutions of the Finnish-Soviet ship trade were changing but clearing still provided a bright horizon of expectations for the Finnish shipyards.

5.5. The end of the special bilateral relationship, 1989–1990

‘Perestroika, a disruptive visitor, comes to Finland,’ the New York Times headlined at the beginning of 1989, describing the uncertainty of Finnish companies in the face of Soviet economic restructuring. Despite growing difficulties, delays, and adjustments in the Soviet trade, the American journalist had found quite optimistic interviewees: ‘Two years ago, nothing worked [...] But now you can get things done [...] Things have settled down somewhat’. The Minister of Trade and Industry Ilkka Suominen commented to the newspaper that the economic cooperation had entered into a new era thanks to the new scientific, technical, and industrial projects.615

Finland and the Soviet Union manifested Gorbachev’s visit to Helsinki in the same year by signing the next five-year agreement on bilateral trade exchange for the period 1990-1995.616 The streets of Helsinki were crowded with people greeting the Soviet General Secretary. Only two weeks after, the people of Berlin tore down the wall, manifesting the starting point of the new post-Cold War era.617 In Finland, this brought about no radical alteration in foreign policy. The peaceful dissolution of the Soviet Union seemed unlikely. As Jussi Hanhimäki analysed afterwards, most state leaders agreed that ‘superpowers did not just wither and collapse’.618

For a small country such Finland, even the weak Soviet Union was strong enough to be treated with respect; even a poor superpower was rich enough to occasionally buy an icebreaker or two. In December 1989, the Ministry of Finance study of the future of the Finnish shipbuilding concluded that, ‘still in this situation we should be prepared to build special-purpose vessels for the Soviet Union’.619

In spite of the turmoil in Europe and all the economic and administrative problems involved in the clearing trade system, the Finnish shipyards understood the five-year protocol as a promise of at least the next five-year transition period. In addition, the Long-Term Programme

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had been recently revised in 1987, and outlined the future of the trade exchange up to the new millennium.620

Why was the archaic, rigid, and expensive clearing system still so strongly supported in political speeches and so popular among the businessmen? The net effects of the political and economic benefits of the Finnish-Soviet bilateral clearing arrangements were impossible to calculate. Nevertheless, it was clear to all that the Finnish shipbuilding industry had been able to cash in on the special trade relationship with cash payments, longstanding personal connections, long-term planning, and economies of scale.621 It would seem that the majority of political and industrial actors mistakenly confused the technical trade and payment system with the broader political and economic framework of the Finnish-Soviet relationship that had provided a hospitable environment for industrial growth. It was as if the temporary, state-level five-year agreements had secured continuation, the state-level trade protocols had confirmed company-level contracts, and bilateralism had promised a steady position for the Finnish industry in the Soviet market.

The world around the Finnish-Soviet bilateral relationship, allegedly isolated from international turmoil, kept transforming. Only two months after the leaders in Finland and the Soviet Union had confirmed the continuance of the clearing trade, the socialist CMEA countries agreed to abolish clearing mechanisms in all trade.622 That raised the question of whether or not ‘all trade’ also included Finland; to what extent could Finland still claim a special status in relation to the Soviet Union and carry on with the bilateral clearing trade?623

The Soviet customers could not provide much assistance. When Wärtsilä’s negotiators complained to the vice president of Sudoimport V.I. Zvegintsev that the company could do nothing without state involvement, Zvegintsev advised the Finns to organise a lobbying campaign: ‘Even though Wärtsilä Marine does not represent state power, it can put the screws on the government. The solution depends on you.’624

Throughout the year, Finnish civil servants put a lot of effort into negotiating a special arrangement that would effectively extend bilateralism, including the possibility to couple the Soviet energy imports with Finnish exports of capital goods and ships. The minimum target was to use the next five-year term as a transition period to cushion the threatening collapse.625

622 PM 25 9.1.1990 on clearing system Finnish-Soviet trade, f. Ulkomaankauppa Suomi-Neuvostoliitto 1.6.–31.10 1990, signum 43.41, UMA.
623 “Vaikka WM ei edusta valtiovaltaa, se voi painostaa, ratkaisu on teistä itsestä kiinni.” Handwritten notes from a meeting in V/O Sudoimport, Moscow 4.12.1987, WM 29, ELKA.
624 PM UM/KPO 1029, 9.11.1990 on discussion on future of the Finnish-Soviet trade, f.
This led to a curious situation in which the capitalist Finland requested more governmental regulation and coordination from the socialist planning economy. Even the Soviet Commercial Ambassador Inkin took it upon himself to ask that ‘someone would explain to him how the capitalist Finland could in free market conditions control the clearing trade’.626

The information that the Finns gathered in the following meetings from the Soviets was obscure and inconsistent. In May 1990, the vice-director of Wärtsilä Marine Martin Saarikangas presented his assessment to the daily newspaper *Helsingin Sanomat* that the contracts the Finns were negotiating in Moscow would be covered through clearing.627 Still in October 1990, Rauma-Repola’s Mäntyluoto factory contracted with Sudoimport for jack-up platforms. This contract, with a value totalling over FIM200 million, was never fulfilled.628

At the end of 1990, the Soviet Union finally decided to close the Finnish-Soviet clearing account at the beginning of the next year. The Soviet Deputy Prime Minister Stephan Sitarjan announced the decision directly to the Finnish Ambassador during Finland’s Independence Day reception on December 6.629 Notwithstanding this somewhat intimate channel for delivering the message, Finland was no longer a special case. The Soviet Union had no more resources or political willingness to treat Finland as such.

The Bank of Finland and VEB closed the clearing accounts on the first day of January 1991.630 The share of the Soviet trade dropped to 4% in 1992 and was estimated to have caused a total loss of 150 000 jobs. However, this was now merely a Finnish internal problem, not an issue for Finnish-Soviet peaceful coexistence.631 The state interventions in the trade had merely prolonged the collapse, not prevented it.632

In the spring of 1992, after the disintegration of the Soviet Union, Finland and the Russian Federation signed a commercial treaty. Instead of bilateralism, this new agreement based future trade relations on GATT, multilateralism, and convertible currencies.633 In principle, this was the end of the Cold War two-way foreign trade policy in Finland. In practice, the
special bilateral Finnish-Soviet relationship, the willingness and ability of the Soviet Union to prioritise Finnish trade in terms of orders and payments, had already broken down during the 1980s.

5.6. Conclusions: Too important to change?
The positive development in the Finnish ship building industry after the post-OPEC shock exemplified the Finnish exceptionalism among the Western shipbuilding countries. The interesting question is how the ships, which were built in Finland, came to be built in Finland and not elsewhere: who paid for them, how much and why? The bilateral clearing trade and payment system is a partial answer to these questions.

From the point of view of the twenty-first century, it may be difficult to understand the lure of bilateral clearing. As Philip Hanson remarked, '[b]ilateral clearing has all the disadvantages of barter between individuals. It is unlikely that countries will trade efficiently on that basis. Prices will typically be manipulated, or unwanted merchandise accepted, to strike an accounting balance.' He continues by observing that the socialist block traded through clearing because the inconvertibility of the currency left them no choice. Finland, according to Hanson, adopted the clearing trade system because its history and geography provided no alternative than to consent to Soviet dictates.634

As this chapter makes clear, Finland did not merely accept the clearing system; Finland cherished it. In comparison to the Finnish multilateral trade with other countries, bilateral clearing was a rigid and outdated system. It was an impediment to the principles of free trade and required constant maintenance. The efforts the Finnish trade administration in ministries and the Bank of Finland invested into balancing the clearing accounts demonstrated the focal role of the bilateral trade in Finland. The Finns campaigned for bilateral clearing trade even after the Soviet side preferred to switch over to convertible currencies.

The clearing trade system had certain economic and practical advantages. Thanks to clearing, it was convenient for the Soviet economic planners to make bulk ship procurements from Finland rather than other western countries, and pay for them without having to use their scarce reserves of convertible currencies. Bilateral clearing trade and payment system and related bilateral state-level arrangements —such the intergovernmental economic commission, the five-year agreements, and the Long-Term Programme— provided the infrastructure to connect economic decision-making on buying and selling in two different economic systems. From the point of view of the Finnish shipbuilding industry, the clearing system provided predictability through its future-oriented plans.

634 Hanson, The rise and fall of Soviet economy, 2014, 82-83.
Nevertheless, the clearing trade system did not create trade. It could facilitate the exchange only as long as the prime decision-makers, profit-driven companies in Finland and state-organisations in the pre-perestroika Soviet Union, had the will and the funds to engage in the bilateral ship trade.

The clearing payment system made the separation of public and private sectors extremely fuzzy. Often, the close relationship between the state and central bank benefited the shipbuilding industry. During the 1980s period of increasing imbalance in the bilateral trade, the Finnish public sector intervened in trade exchange to balance the clearing accounts and to support exports. The Bank of Finland was part of the Finnish consensus. Together with the state government, it acted as if it was part of the system and strived to maintain high-volume Soviet ship trade and employment. Clearing payments supported ship exports on a higher level that would otherwise have been financially possible.

However, sometimes the strong role of the state organisations also diminished the control the private shipbuilding companies had over their own contracts. The negotiations of the early 1980s demonstrated how the Bank of Finland effectively re-negotiated the terms of payments in the ship contracts and applied them as a monetary policy tool.

As this chapter has pointed out, the volume and value of the clearing exchange was subject to changing political priorities. During the first half of the Cold War, the Finnish-Soviet bilateral clearing had made the trade exchange into a symbol of peaceful co-existence, and thus related it to the concerns over Finland’s position as a part of Soviet security system. The technopolitical meaning of the bilateral trade as an indicator of the political relationship was further emphasised in the long-term agreements since the 1970s. The Finnish-Soviet rhetoric systematically constructed and reconstructed the commonly shared interpretation of the advantageous clearing trade, highlighting the stability, continuation, and profitability of this special relationship. These perceptions became influential narratives because the conclusions were not untrue: the constantly increasing ship trade could be supported by statistical timelines. Consequently, the history of the Finnish-Soviet bilateral trade was appropriated to justify the belief in the continuation of the clearing trade in the future.

This discursive illusion made the Finns slow to realise that the special trading relationship with the Soviet Union was about to end. The volumes and cash payments of clearing trade were too important for the Finnish shipyards, the shipyards were too important for the Finnish-Soviet trade, and the Soviet trade was too important for Finnish-Soviet political affairs for Finnish politicians or industrialists to dare to risk abandoning bilateralism. Escaping the Cold War straitjacket was a leap into the unknown. The only certain thing was that landing without the Eastern trade cushion would damage the shipbuilding industry. The
Finnish capitalists and the centrally coordinated trade system remained strange bedfellows even after the bilateral system began to be too rigid, expensive and old-fashioned for the Soviets. It was the Soviet decision to abandon bilateral clearing that finally declared the special Finnish-Soviet trade relationship dead.

The mature Finnish Cold War shipbuilding system enjoyed relative stability, profitability, and predictability which made Finland’s Cold War shipbuilding distinct from other western European countries after the oil crisis-induced shock to global shipbuilding. The previous chapter discussed the clearing system, which provided a framework for long-term planning, and thereby contributed to the confidence in the future shipbuilding trade. This chapter concentrates on the reorganisation and internationalisation of the Finnish shipbuilding industry which took place as a reaction to economic turbulence and future pessimism during the ‘long 1980s’—from the late 1970s to early 1990s. In a way, the chapters 5 and 6 are parallel as both describe a process of future-oriented decision-making. The co-existence of these two themes, trust in the future of the ship trade in the framework of the Finnish-Soviet special relationship and distrust in the future of shipbuilding in Finland that triggered a reorganisation process do not, however, pose a paradox.

In Chapter 5, belief in Finland’s special position in the Soviet market nurtured a longstanding confidence at the shipyards that the bilateral trade provided a reduced but considerable demand for Finnish shipbuilders. The Finnish domestic debate circled around the question of how many and what kind of shipyards would survive the new circumstances.

This chapter addresses the first research objective as it examines the dynamic between the companies within the Finnish techno-economic shipbuilding system. A central theme is the demise of the coordinated competition that had characterised the Cold War Finnish shipbuilding system. Through cooperation and compromises, the limited group of shipbuilding directors had been able to control the contest for Soviet orders, minimise destructive price competition, decrease risks involved in specialisation, and effectively stabilise the market positions of the Finnish shipyards. Compromising between rival companies was not easy during the upswing but in the downturn, it became a zero-sum game of survival. Nevertheless, the need for coordination between shipyards did not disappear; acquisitions and mergers replaced industrial associations and cartels.

This chapter approaches the second research objective —state-industry relationship— via the governmental and industrial decisions that resulted in the reorganisation and internationalisation of the Finnish shipbuilding industry. In the mature stage of the Finnish Cold War shipbuilding system, the industrial expansion was a shared system goal that joined the industrial and governmental interests together. The reorganisation of the Finnish shipbuilding industry took place under circumstances in which gains in productivity came
from reducing rather than increasing the workforce. The technopolitical role of the shipbuilding industry as a provider of industrial jobs altered when national competitiveness and minimal public expenses replaced full employment as the leading industrial policy doctrine.

Throughout the Cold War, the Finnish shipbuilding industry had been ‘Finnish’ in the sense that it was owned by Finns and located in Finland. At the end of this period, the state and the industry had to re-negotiate their mutual relationship in circumstances where industrial production and ownership crossed borders.

Finally, the chapter contributes to the third research objective through examining the changing national priorities in industrial transformation that contributed to the dissolution of the Finnish Cold War shipbuilding system. Though not disconnected from the problems in the Finnish-Soviet trade, the shipbuilding reorganisation process was triggered by external factors such as the international recession in shipbuilding. The economic difficulties—which were concurrent or expected—forced the state and the industry to re-imagine their future expectations of shipbuilding.


In its mature stage in the 1970s, the Finnish Cold War techno-economic system of shipbuilding expanded in production and employment. As a contrast to economic turbulence elsewhere, it seemed to have gained an unstoppable momentum.

One of the few sources of constant friction between the system and the state was unstable employment at the shipyards. Shipbuilding is a project-based business and large number of short-term contracts had the potential to cause short-term unemployment that was not optimal from the perspective of national welfare and industrialisation projects. To avoid unnecessary attention on the fluctuation of shipyard employment and to tackle the Finnish ‘immigration problem, skilled workers immigrating to Sweden or moving to other industries in search of secure employment, the STTY member companies had agreed not to recruit workers from other shipyards, not to publish salaries in newspapers, and not to advertise vacancies more than once in month to avoid public awareness of the labour shortage. The Finnish Cold War shipbuilding system was not immune to international fluctuation or domestic competition, but it was often able to solve problems before they triggered a full-scale crisis and massive layoffs.

635 Martti Rewell to Aarno Mannonen 24.4.1980, STTY pöytäkirjat 1, STTY, ELKA.
636 PM STTY on a wage policy agreement 26.8.1980; Records from STTY PTT-working group meeting at Pansio Shipyard 7.5.1980, STTY pöytäkirjat 1, ELKA.
In 1977, two things happened that broke the stability of the system and set the tone for the restructuring of the Finnish shipbuilding industry in the next decade. First, a shift in the political environment towards a more liberal economy was marked at the remote Korpilampi hotel. A wide range of industrial and political actors gathered together to discuss urgent economic problems, and eventually opened a new page in the Finnish consensus economy ‘in the spirit of Korpilampi’. When the political and financial elites left the location after a couple of days of discussion and networking, they agreed to prioritise industrial competitiveness over full employment.637

Secondly, the shipyard crisis officially arrived in Finland. ‘The shipyard crisis is reality,’ as the headline in the maritime monthly Navigator stated in the autumn of 1977 as a signal of urgent distress.638 Some shipyards had taken no new orders in years, and many locations had announced the possibility of redundancies.

The prominent shipbuilding countries such as the UK and Sweden had ended up with nationalisation and closures.639 All over Western Europe, governments adopted different national shipbuilding strategies combining industrial downscaling and support for restructuring in the hope of preserving competitive shipyards for a future upswing.640 In the international comparisons, however, the Finnish shipbuilding industry was still doing well. The four major shipbuilding companies directly employed over 18 000 shipyard workers at twelve shipyards.641

The discussion of the Finnish ‘shipyard crisis’ came about in 1977 when a downswing in the Soviet five-year planning cycles coincided with a slump in western demand. The shipyards had completed their orders in hand, Western trade had slowed down, and the Soviet Union had not yet started to make new orders to fulfil the next five-year plan.

637 Outinen, Sosiaalidemokraattien tie talouden ohjailusta markkinareaktioiden ennakointiin, 2015, 85.
638 Navigator 8/77.
639 In the UK, the majority of the shipbuilding industry was nationalised in 1977 but privatised again from 1984 onwards. In Sweden, shipyards were merged into one state-owned holding company in 1977 that abandoned merchant shipbuilding. Hugh Murphy, "Labour in the British shipbuilding and ship repairing industries in the twentieth century," in Shipbuilding and Ship Repair Workers Around the World: Case Studies 1950-2010, eds. Varela, Raquel, Hugh Murphy, and Marcel van der Linden (Amsterdam University Press, 2017), 97-103; Karlsson, "From boom to bust: Kockums, Malmö (Sweden), 1950-1986," 2017.
International press overviews in shipyard archives provide some insight into the atmosphere in which Finnish decision-makers read the headlines about domestic shipyard crisis. Since 1975, the monthly press reports at Wärtsilä Turku shipyard had been depressing from for a small country without a permanent state-subsidy mechanism; the UK had implemented hard protectionist measures to protect its shipyards (Fairplay 18.12.1975), CMEA countries also suffered from a tanker surplus and were looking for new markets in the west (Seatrade Dec 1975), shipyard closures were planned in Sweden (Svensk sjöfarts tid. 7/1976), the British shipyard crisis had already lasted a decade and despite state interventions, productivity had not improved (Economist 14.2.1976), the USA increased its support for shipyards to compete against Japan (Economist 13.3.1976), West Germany subsidised domestic orders by 16% (Fairplay 5.8.1976) and the Netherlands by 23.75% (Lloyd’s List 7.10.1976) etc.642

Domestic challenges in Finland together with depressing international news reinforced the crisis mentality that pressed for re-engineering both shipbuilding and shipbuilding policy. The political and business elite in Finland were almost unanimously in favour of the moderate economic liberalisation in the long term but disagreed on what this should mean in practice.643 Instability made everyone nervous. From the company point of view, an inability to provide steady employment for skilled workers hampered future recruitment and led to sunk costs in

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643 On the turn from consensus economy to liberalism among the Finnish business elite, see: Wuokko, Markkinatalouden etujoukot, 2016.
workers’ education. For the Finnish government, a mass of unemployed metal workers was as well a distressing image.644

Potential deindustrialisation in Finnish shipbuilding had a tangential but well-recognised connection with national security as it could cause discomfort in Finnish-Soviet relations. The Finnish shipbuilding companies had invested heavily in modern shipbuilding facilities and education, counting on the future Soviet trade which the Finnish and Soviet leaders had confirmed in several treaties.645 The shipbuilding industry invoked these state-level agreements in public if the plans obligated the governments to ensure that Finland had the shipbuilding capacity to fulfil the plans. The closures of shipyards that had been modernised less than a decade ago to fulfil Soviet demands could be taken as a sign of distrust in the Soviet Union.

In the summer of 1977, the Ministry of Trade and Industry appointed a Shipyard Committee to analyse the alleged crisis in shipbuilding. The chair was civil servant Pentti Viita from the Ministry of Trade and Industry. According to corporatist traditions, the committee was composed of representatives from ministries, industry, and labour unions. The task of the Shipyard Committee was to examine the future prospects for Finnish shipbuilding and to suggest strategic measures for overcoming the challenges. Nobody could possibly tell how long the international depression in shipbuilding might last. Nobody wanted to follow Sweden and the UK along the path to a prolonged crisis, where only state interventions and funding kept uncompetitive shipyards alive.

The Shipyard Committee started its work under gloomy future expectations when the Finnish shipyards reported continuously empty order books. At the end of the year, the Shipyard Committee proposed a 25-point action plan to save the Finnish shipbuilding industry. The emphasis was on governmental measures.646

The short-term focus implied that the Shipyard Committee expected the crisis to be merely a temporary nuisance. To avoid future crises, the committee suggested expanding the Soviet

644 All political parties had fresh in their mind the year 1975, when the Finnish rate of unemployment had peaked provoking talks of a national state of emergency. Kuusterä & Tarkka, Suomen Pankki 200 vuotta II. Parlamentin pankki, 2012, 414, 428; Tiihonen, The Ministry of Finance, 2012, 181.

645 Including: the Treaty of Commerce between Finland and Soviet Union 1947, SopS 13/48; Agreement on friendship, cooperation and mutual assistance (YYA) 1948, SopS 17/48; Founding on standing intergovernmental economic commission 1967, SopS 45/67; Agreement on constant development of the economic, technical and industrial cooperation 1971, SopS 64/71; The 1977 signed Finnish-Soviet Long Term Agreement on constant development of industrial and economic cooperation explicitly outlined the future expansion of the Finnish-Soviet ship export that was to rise 13-33% in every five-year period until 1990. From SUR1.2 billion in 1976-1980 to 1.6-1.8 billion in 1986-1990. Finland’s International Treaty Series, SopS 54/1977.

trade to insulate the business from international economic fluctuations. At first, the state should investigate whether the Soviet Union could contract for new ships during the ongoing five-year period of 1976 to 1980 or re-schedule orders in the next five-year period of 1981 to 1985. In order to expand the shipbuilding quotas in the bilateral trade, the committee enquired about the possibility of increasing transit trade from the Soviet Union to third countries and increasing imports of oil and natural gas. The committee’s second suggestion was the rescheduling of state orders to alleviate the temporary lack of work. Finally, the committee brought up the possibility of direct subsidies for certain domestic orders that would help to maintain shipyard employment until the next upswing.647

To adjust the shipyard capacity in the new situation in which the international shipbuilding market could not provide profitable orders, the committee proposed 20% cuts in the domestic shipbuilding capacity.648 In ideal circumstances, according to the Shipyard Committee report, domestic orders should cover up to 20% of the Finnish ship production and Soviet orders 60%–70%.649 Backed by their Cold War experience, the Finnish shipbuilders and politicians saw the Soviet trade as a safe haven protected by the breakwater of bilateralism. It was only because of the restricted size of this market, that the capacity of the Finnish shipbuilding industry might have to be rationalised in order to avoid destructive competition within the Finnish shipbuilding system.

The shipbuilding industry was not the only industrial branch to struggling at that time. Another contemporary committee report, the Industrial Advisory Board report of 1979 on Finnish industrial potential puts the Shipyard Committee report in perspective.650 The Ministry of Trade and Industry had appointed the Industrial Advisory Board investigation committee a year after the Shipyard Committee in 1978. It was also chaired by Pentti Viita. The committee report described the Finnish industrialisation as being on the threshold of a paradigm shift. Until the 1970s, industrial growth had stemmed from the increase of production output, especially in terms of labour, but since 1974 the industrial workforce had declined. Industrial growth and modernisation in the future would no longer result in a proportionate increase in industrial jobs. According to the committee report:

647 KTM/Pentti Viita to Formin 107/070/77, 13.9.1977 on ship trade during the five-year period 1976-80; PM KTM/Shipyard committee 7.10.1977, summary of proposals for the measures that are related to the Soviet trade and shipyard employment 1978-80, folder “Ulkomaankauppa ja ulkomaankauppapolitiikka, Neuvostoliitto 1951” no. 163, signum 58 B1, UMA.
649 Shipyard committee report 1977, 26, 69.
Throughout history, technological development has been seen as a threat to industrial jobs. At the moment, this threat has appeared to increase because of the diffusion of microprocessors. Based on experience from the past, new technology has opened new opportunities for growth instead of resulting in a decisive change that diminishes employment. It is possible, that this time history will not repeat itself.651

The new era required a new kind of industrial policy that the Korpilampi conference had anticipated. Only competitive industrial production of quality products with international demand could provide a steady income for the industrial labour force and facilitate economic growth in the service sector. Without direct reference to shipbuilding, the committee report questioned an industrial policy that supported products with weak international competitiveness and depressed demand. The committee concluded, the starting point of policy making should be a critical evaluation of the future prospects of Finnish competitive position in the international market. If the international demand was about to recover or the rival international production was about to decrease, the state policy should be to provide temporary aid to keep the industry afloat until the situation was back to normal and production was once again competitive. Usually, the committee noted, competitiveness did not recover by itself, but the capacity had to be adjusted according to the new circumstances.652 This correlated quite directly, with what the Shipyard Committee proposed.

Both committee reports captured an obscure transition phase in Finland’s industrial policy. On the one hand, industrial competitiveness had already replaced industrial expansion as a priority. On the other hand, industrial and political actors still tended to justify the measures employed to gain competitiveness—such as internationalisation, reorganisation, and state interventions—by invoking the domestic employment situation.

The switch from full employment to industrial competitiveness as the prime national target changed the arguments only a little. In 1977, when Tankmar Horn returned from Korpilampi conference, he compared Wärtsilä to the ‘sampo’—a wealth-creating device in Finnish mythology. According to Horn, Wärtsilä had made such an overwhelmingly positive contribution to Finnish economic development that it could now without hesitation discuss state support.653

653 Christian Landtman in Wärtsilä personnel magazine 5/77; Tankmar Horn in Wärtsilä personnel
Another illustrative example was an interview with Wärtsilä’s newly appointed CEO Tor Stolpe (1927-2011) Wärtsilä personell magazine in 1978. Stolpe replaced Tankmar Horn in operative management, while Horn continued as the chair of the board of directors and concentrated on large-scale strategic questions and communications with public officials. In Stolpe’s first announcement for Wärtsilä’s staff, he underlined that ‘international competitiveness was the alpha and the omega’ but immediately continued, that internationalisation would not decrease domestic employment but rather increase it.654

The argument over national welfare through industrial employment continued to dominate the state-industry communications in 1978. When Wärtsilä’s director Tankmar Horn sent letters to the Ministry of Trade and Industry asking for financial support for two passenger ferries, he justified his requests with the difficult employment situation in Turku.655 When civil servants prepared the shipyard subsidy plan for the government, they carefully estimated how many employed man-years the state would receive in exchange for financially assisting the passenger ships.656 When members of the Parliament raised critical questions on the government’s inaction on the issue of potential low-season at shipyards, they invoked to the distress of the workers and their families.657

When the Parliament appropriated FIM20 million in a supplementary budget for domestic ship orders in the spring of 1978, it did this to support shipyard workers.658 When Horn contacted the Ministry of Trade and Industry in the late summer of 1978 with a request for a new state aid scheme for two more passenger ships for another Finnish shipping company, he did not forget to mention how critical the contract was for employment at the Turku shipyard.659

After Wärtsilä had received state support, Rauma-Repola and Enso-Gutzeit also approached the Ministry with similar, though significantly smaller, projects using almost identical arguments about the difficult employment situation at the Uusikaupunki and Savonlinna shipyards.660 When Wärtsilä’s new CEO Stolpe approached the Ministry in 1979 with another Finnish shipping company asking for support for the contract of two more passenger ferries,
Wärtsilä and its customer company had already estimated the appropriate subsidy based on the subsidy/man-year ratio in the previous state-aid packet.\textsuperscript{661} Based on the formula, the public cost of shipyard subsidy per shipyard worker, was indeed lower than the unemployment benefits would be. The government decided to propose the Parliament to add shipyard subsidies to a supplementary budget.\textsuperscript{662} In 1978 and 1979, the government appropriated direct shipyard subsidies of FIM70 million in total, of which FIM65 million was used.\textsuperscript{663}

The fear of mass unemployment motivated the political decision-makers to prompt action and to allocate state funds for critical orders. At the same time, the companies carried out only few of the other industrial rationalisation measures the Shipyard Committee had proposed. At the time the report was published at the end of 1977, the Soviet Foreign Trade Organisations had begun to order new ships. The Finnish shipyards announced several new contracts and soon turned expectations towards the next upswing. Industrial downscaling did not take place—indeed, quite the contrary occurred. Instead of decreasing the shipbuilding workforce by 12\% as the Shipyard Committee had suggested, the shipyards increased their staff by 12\%.\textsuperscript{664}

At the turn of the 1980s, the Finnish shipbuilders shared a highly optimistic outlook. All domestic newspapers joined the Navigator in circulating positive news of the prosperous industry.\textsuperscript{665} To boost optimism about the future further, Finland and the Soviet Union signed a new Long Term Programme in 1981. This revised program articulated the state-level commitment to the continuous development of the volume and value of Finnish-Soviet ship

\textsuperscript{661} Tor Stolpe to Pekka Rekola/KTM 2.15.1979 and an enclosed memorandum the influence of Oy Silja Line Abäss ferry project on the employment at the Turku shipyard 2.15.1979; Tor Stolpe to KTM 19.4.1979: EAB1 telakka-avustukset, KTM, NA.

\textsuperscript{662} Proposed resolution for the government meeting 28.6.1979 and enclosed preparatory work: Memorandum KTM/Timo Alhons on state aid for Wärtsilä/Suomen Höyrylaiva OY 19.6.1979, EAB1 telakka-avustukset, KTM, NA.

\textsuperscript{663} Table on shipyard subsidies 9.9.1981, EAB1 telakka-avustukset, KTM, NA; Laivatilaustyöryhmän muistio, luonnos 12.1.1983, Työryhmämuiistiot VM 1, Valtiovarainministeriö 1983 (Ship contract working group, Ministry of Finance, draft 12.1.1983, original classified, 1983), Valtiovarainministeriö, komiteat. Laivatilaustyöryhmän arkisto, 1, NA. The Shipyard Committee report had proposed that the state appropriate FIM60 million for shipyards during the expected depression from 1978 to 1980 as an alternative to unemployment benefits. Compare with Shipyard committee report 1979, 82-83.

\textsuperscript{664} In 1977, the Finnish shipyards employed approximately 16 000 people. The committee report suggested decreasing this number to 14 000, but it increased to 18 000 in 1983. Shipyard statistics, STX Turku.

In an upswing like this, state subsidies and other measures were no longer critical to industrial survival but they were, as Mikko Uola has articulated, ‘moral support’. Only one Finnish company abandoned shipbuilding during this first wave of the shipyard crisis. Navire, which had a shipyard in Naantali and machine production in a couple of other locations, contracted with the Norwegian Kvaerner on selling its facilities. The trade was not realised. Foreign acquisitions required permission from the Bank of Finland, and the central bank refused to give them. Instead, presumably unhappy with the possibility of having a Norwegian competitor in the home market, Wärtsilä and the escalator company Kone eventually bought Navire’s properties.

To sum up, the first wave of shipyard crises in Finland resulted in a great deal of policy activity and state-industry dialogue, but there was not much of a strategic change. From 1977 to 1982, the shipbuilding interest groups utilised the crisis mentality to lobby for a beneficial shipbuilding policy and to prepare the shipyard workers for change. Their crisis rhetoric implied a parallel with the Finnish and Swedish shipbuilding to make a favourable state policy seem imperative.

In contrast to Sweden and the UK, where state interventions had a negative reputation as expensive and inefficient attempts to prevent the inevitable, the Finnish shipyard crisis was expected to be only temporary. The survival of the industry was not in danger, only the industry’s employment was. While temporary problems made cooperation with the state necessary, positive future prospects made public support rational. Hence, the crisis rhetoric was about balancing on the breaking point between a successful future and difficult present. Shipyard companies mixed and matched difficulties and bright expectations to motivate the political decision-makers to support a shipyard-friendly environment.


‘Shipyards on the threshold of a new crisis’ alerted the Navigator in the autumn of 1983. The circumstances of the autumn of 1977 seemed to repeat themselves. The Finnish shipyards were once again finishing their last orders in hand without new contracts on the horizon to keep their capacity employed. As the Navigator’s editor Markku Ranin noted, he could report on
the topic by recycling seven-year-old titles and texts. In the way this note underlined the cyclical nature of shipbuilding, it expressed confidence also in the future upswing.

The Ministry of Trade and Industry appointed a second shipyard committee that had the same task, the same chair, and even the same name as the first committee. The Shipyard Committee of 1984 recommended that the Finnish shipyards reduce capacity and increase cooperation. The committee published its report in 1984, once again at the point when new Soviet orders had just brightened the horizons of shipbuilding expectations.

The second shipyard committee yielded no considerable results in public. Nevertheless, behind closed doors, the four biggest Finnish shipbuilding companies, Wärtsilä, Rauma-Repola, Valmet and Hollming, entered into consultations about a merger of all Finnish shipyards into one governmentally supported company.

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Should the profits of the Finnish-Soviet ship trade be accredited to the political or industrial actors? The Finnish ship trade with the Soviet Union used to be so profitable that many interest groups wanted to take the credit from it. In 1984, Wärtsilä Turku shipyard refused the visit of the social democrat Prime Minister Kalevi Sorsa. The party newspaper of the Social Democrat Party commented the issue with a cartoon of Wärtsilä’s director Tankmar Horn arrogantly turning down Minister Sorsa who, as the chair of Finnish-Soviet Economic Commission, tried to bring to Wärtsilä ‘Easter trade, ship contracts, and icebreakers’. Suomen Sosialidemokraatti 12.9.1984, original Stefan’s collection 1984:104, TVA. Used with permission by Työväenarkisto.

Why was this second time different in the way that it motivated the well-established shipbuilding companies to negotiate over such a radical reorganisation? In the absence of primary archival sources, their reasoning can be contemplated through contextualisation.

First, no remedy had been found to the old problems—global overcapacity, low demand, and low prices. International competition and governmental subsidies abroad had reduced market prices, often below production costs. At the same time, as the previous chapters have described, the privileged position of the Finnish shipyards in the Soviet Union had been challenged. The Western shipbuilding countries had entered into the Soviet market and the Soviet Union expressed a growing interest in Asian shipyards. 672

Secondly, a paradigm shift in corporate management prioritised a specialised and streamlined production structure instead of the traditional diversified multi-branch conglomerates. As a

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672 STTY Annual report 1985, STTY 3, ELKA.
Valmet strategy paper outlined in 1984, portfolio management should be similar to trimming fruit trees: ‘If branches are never cut, the tree may grow big but it won’t bear fruit.’ Shipbuilding, the strategy paper continued, was a particularly risky branch that involved high fixed costs and volatile demand.673

Similar considerations took place in other corporations. Wärtsilä, for instance, had branches ranging from diesel engines to lavatories, and from security systems to art glass. After 1984, when Wärtsilä was listed on the Stock Exchange in Stockholm and London, the ability to show steady profitability to the shareholders across the corporate group became more important than before.

Thirdly, the Finnish shipyard managers had recognised the need for radical re-engineering of production and working culture. Both the first and the second shipyard committees had paid attention to hierarchical organisations, inflexible processes, rigid job specifications, the separation of design and production and the strong presence of labour unions at yards that created resistance to change, inefficiency, and strikes.674 Despite the willingness to change, any reforms had proved to be painfully difficult to implement.

673 Strategy Proposal 4.6.1984, Valmet keskushallinto (Collection of Valmet central administration, folder number) 637, ELKA.
674 Wärtsilä Turku Shipyard was particularly famous for its strikes that frequently stopped the work usually in protest to raise wages, but sometimes also as a response to disagreements over workplace safety or foreign affairs. About this “striking culture” see Tuukka Pääkkönen, Turun Pernon telakan lakkokulttuuri- lakot, niiden väitetty syyt ja toimintaperiaatteet vuosina 1976-1984 (Master’s Thesis, Turku University, 2016); Shipyard committee reports 1977 and 1984; Jukka Niemelä, “Työelämän suhteet ja työn uudelleenorganisointi Masa-Yardsissa” in Näkökulmia Suomen telakoiden toimintatapojen muutoksiin, eds. Heikki Leimu, Matti Nallikari & Jukka Niemelä, Sosiological research reports B24 (Turku University, 1992)
To improve workplace culture, Wärtsilä published an allegorical cartoon of two sailors who fight against cost-efficient Asian and government-subsidised European enemy ships. While Sailor Precise (Merimies Jämpti) understood that he has to take immediate action, to forget old rigid practices and to apply new methods to win the war, Sailor Stupid (Merimies Mäntti) focused on nostalgic day-dreaming and complaining about the unfair situation. The story ends with Sailor Stupid realising he had to change his attitude to survive upcoming battles. Brochure ‘Tartu Ongelmaan – Meritaistelu tarvitsee merimies Jämptiä’, (Undated, Wärtsilä Telakkaryhmä), WM 43, ELKA.

Fourthly, the cooperative culture of the Finnish shipbuilding industry lost its strongest advocates as a result of a generational change in the Finnish shipyards’ top management. Between 1983 and 1984, three out of four old shipbuilding directors retired or moved to another company. The new management was no longer satisfied with the established negotiation outcomes. Rauma-Repola calculated in 1983 that in open competition it could gain a 35% share of the Finnish-Soviet ship trade instead of the 15-20% that it had been used to during the Cold War. New members that replaced the old managers in the unofficial coordinating body the ‘Club of Five’ were not committed to the cooperation and old practices of their predecessors. The Club started to unravel and finally broke up in 1985.

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675 Landtman, Minnen från mina år vid Wärtsilä, 2011, 170–171; Uola, Meidän isä on töissä telakalla, 1996, 484.
676 Landtman, Minnen från mina år vid Wärtsilä, 2011, 262.
Figure 29: The shares of Finnish shipbuilding companies in the Finnish-Soviet trade in 5-year-periods 1960-1990. The shares of LATE are totalled with Valmet, who bought LATE 1973. The cooperative competition had effectively managed to freeze the shares of the Finnish shipbuilding to the situation in the 1950s. Data: Uola (1996), 557.

The final strike to the Finnish shipbuilding cooperation took place on December 5th 1986 when the company directors decided to break up the Finnish shipyard association STTY, invoking increasing costs and decreasing benefits of the cooperation. It was an apparently surprised STTY board that learned of the directors’ decision at their meeting the following week. The STTY board meeting could find no reasonable argument to support the decision, but noted that none of the directors had been closely involved in the everyday work within the association. The costs of cooperation could hardly be blamed, as the membership fees were decided by the members themselves.

The STTY board members were worried about the international credibility of the Finnish shipbuilding industry if Finland was the only European shipbuilding country, except Greece, without a national shipyard association: ‘AWES countries have experienced various problems in recent years but no one has started the industrial reorganisation process by closing down the industry’s own association’. Nevertheless, in February 1987, the STTY board made a unanimous decision to close down the cooperative organisation.

677 Minutes from a meeting 5.1.1987, STTY Kirjeenvaihto 14, ELKA.
678 Records from STTY board meeting 10.12.1986, STTY pöytäkirjat 3; Minutes from a meeting 17.12.1986, STTY Kirjeenvaihto 14, ELKA.
679 Minutes of meeting on the STTY 17.12.1986, STTY Kirjeenvaihto 14, ELKA.
680 AWES-maiden laivanrakennuksessa on viime vuosina ollut kaikenlaisia vaikeuksia, mutta missään muussa maassa ei ole aloitettu saneerausta purkamalla oma etujärjestö", Minutes of meeting in STTY 17.12.1986, STTY Kirjeenvaihto 14, ELKA.
681 The association had FIM450 000 in its bank account, which was evaluated to be enough for STTY to operate for a couple of years without collecting any new membership fees. When STTY was
These internal and external changes came together in the aftermath of the second wave of the Finnish shipyard crisis in 1984, as the corporations were more prepared than before to challenge the established industrial structure of the Cold War shipbuilding system.

The company directors kept their reorganisation plans secret in order to maintain an image of rivalry between Finnish shipyards for the Soviet Union. Still in June 1986, when Wärtsilä and Valmet already coordinated their production as a preparation for the merger, Wärtsilä’s director Tor Stolpe announced to the Finnish business magazine Talouselämä that the shipbuilding industry was not negotiating rationalisation or future reorganisation.

Two west coast shipbuilders, Rauma-Repola and Hollming, left the negotiation table. Wärtsilä and Valmet reached an agreement over reorganising their shipbuilding and paper machine production into two new subsidiaries. When the merger of Wärtsilä’s and Valmet’s units was published on 30th July 1986, it was a big surprise to anyone not directly involved in the negotiations. After learning about the plan, Navigator described the ‘the most carefully guarded secret of Finland’ as the ‘most radical rationalisation in history’.

The merger strongly contradicted Wärtsilä’s and Valmet’s histories and public images. Wärtsilä was one of the biggest privately-owned Finnish conglomerates. Valmet was a state-owned company maintained to counterbalance Wärtsilä’s dominance. The ‘unlikely Finnish connection’, as the Journal of Commerce headlined, received attention beyond the national borders. Commentators asked why the ‘unorthodox merger’ was necessary, but often ended up approving the resolution as an example of future-looking realistic managers adjusting their business to a new situation. The atmosphere in the 1980s generally favoured bold moves.

Indeed, the unholy alliance between Valmet and Wärtsilä appeared in public as a pragmatic decision made by business managers who were not burdened with strong personal affection for shipbuilding. Wärtsilä and Valmet shared the ownership of the new company based on the size of their production, 70% for Wärtsilä and 30% for Valmet. Thanks to its majority, Wärtsilä was able to dominate the new shipbuilding company and to give its name for the subsidiary, Wärtsilä Marine. Obviously, marine technology was much more important for Wärtsilä than

682 Seppo Ristilehto, Liiketoimintashokki. Tapaustutkimus laivanrakennus ja autoteollisuusalan yritysten krisiratkaisuista ja ohjaustoimenpiteistä (diss. Turku School of Economy and Business Administration, 2004).
683 Talouselämä 34/1986.
684 According to Uola (Hollming 1945-2000, 2001, 245-246), Wärtsilä had insisted that all participants decrease their dependence on the Soviet trade, which Hollming and Rauma-Repola did not want to accept.
it was for Valmet. Ships generated more than half of Wärtsilä’s results. From Wärtsilä’s point of view, the deal with Valmet eased domestic competition in certain specialised niches. Valmet had shown clear inclinations towards entering into Wärtsilä’s core business of ice-going vessels and passenger ships, and even managed to get its first orders—a nuisance if not a threat to Wärtsilä’s marketing.

An important motivation for this reorganisation was that the turmoil allowed the shipyards to carry through rationalisation that would have been harmful to the old corporate brand. The aim was to decrease capacity from 10 000 to 6 000 shipyard workers. Wärtsilä Marine’s core competence was hard technology, as was revealingly expressed in preparatory negotiations in the summer of 1986: ‘It is the technology that generates profits, not the labour’. Industrial reorganisation that would promote international competitiveness and reduce inefficient capacity was according to the national policy. The Finnish government supported the merger with a bill of tax reliefs. The bill substantially decreased the financial risks involved in the reorganisation as it eliminated taxes worth FIM700 million that the parent companies Wärtsilä and Valmet would otherwise have been obliged to pay.

How well this tax-relief demonstrated the state priorities in the shipbuilding has to be evaluated against the wider background of Finnish economic policy. Economic historians have noted that economic policy in 1986–1987 was on the whole generous. They have interpreted this as a result of loose control and collaboration within the government, or as an early campaign for the upcoming Parliamentary elections. In any case, the shipyard companies definitely took the ‘Lex Wärtsilä Marine’ as a considerable sign of state-support for shipbuilding rationalisation.

The Finnish parliament debated before accepting the bill but it had meagre consequences. A small group of extreme left-wing politicians railed against the arrangement, which according to their arguments, meant privatising shipbuilding and increasing unemployment, and would also damage Finnish-Soviet relations as it was about to decrease Finland’s ability to build ships.
for the Soviet Union. The vast majority of the parliament backed the proposal.\textsuperscript{693} Instead of privatisation or killing off the state shipbuilding, the supporters viewed the tax reliefs as a reasonable policy instrument to facilitate industrial restructuring. For this majority, the question was no longer whether the Finnish shipbuilding required rationalisation or not, but how the state would best facilitate industrial adaptation to the global competition. That even the majority of left-wing parties were ready to accept lay-offs in exchange for economic growth was a reflection of the prevailing consensus over liberalisation and deregulation all across the political spectrum.\textsuperscript{694}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{fig30.png}
\caption{Shipyard workers in Finland, 1970–88}
\end{figure}

\textbf{Figure 30:} Workforce employed directly by the Finnish shipyards. Reductions after 1985 were mostly caused by the closures of the Valmet's old shipyards in Turku and Helsinki. While the labour was reduced, the share of middle-management increased. Data: Shipyard Committee 1984, STTY, Tuominen (1988).

‘The Shipyard crisis is coming, after all,’ headlined the business weekly \textit{Talouselämä} in June 1985. This second wave of the Finnish shipyard crisis gave a fresh impetus for industrial re-organisation in Finland. However, it was hardly visible in statistics. In 1984–1986, shipyard employment was on a downward swing but as figure 30 demonstrates, it had not collapsed. As a matter of fact, it had only returned to the level it had been before the mid-1970s oil crisis peak. What had collapsed, however, was the hope of Soviet orders that would employ the full capacity.

\textsuperscript{693} The bill was approved by the 85\% of the votes.

\textsuperscript{694} Parliament records of plenary session, Vp1986 7.11; 11.11; 14.11; 18.11; 21.11; 27.11; 28.11; Säädk 907/86.
Paavo Haavikko, the author of Wärtsilä’s 150th anniversary chronicles was neither a historian nor a shipbuilder, but a poet. Nevertheless, he shared a feeling of ongoing transformation with the company he wrote about, and ended his story by describing a future that would require the ability to change more than anything else:

*Firms have to accept that there are several alternative futures. They have to prepare themselves in versatile ways, be ready to react to changes as the future plans are coming true in a new manner that follows no old rules.*  

The period 1978–1985 was about waking up at the shipyards to notice inevitable structural changes in the operational environment, to accept the necessity to change and to get ready for the market reorientation of the future.

6.3. A great leap into the unknown, 1987–1988

Wärtsilä Marine started its operation on at the beginning of 1987. From the start, it made bold attempts to implement profound adjustments in the production, strategy, and competitiveness of Finnish shipbuilding. Personnel changes at the top management level underlined this aspect. Traditionally, Wärtsilä’s shipbuilding managers had possessed technological education and experience in the shipbuilding industry. When longstanding director Christian Landtman had retired in 1984, he had nominated shipbuilder Åke Wolfram as his successor. After Wolfram unexpectedly resigned due to health problems, the corporate director Stolpe, a geologist by training, did not replace him but took over Wärtsilä’s shipbuilding division alongside his other duties. Only a while later, he appointed a CEO for Wärtsilä Marine from outside the field. Consequently, after 1985, the Wärtsilä corporate group had no shipbuilders on its board of directors.696

Wärtsilä Marine’s new CEO Pekka Laine (1937–) was a change manager. He had a degree in social sciences and work experience in paper industry. Having specialised in industrial rationalisation and re-structuring, he had earned a reputation as a ruthless reformer and the nickname ‘Musta-Pekka’, or Black Peter.697 This public picture suited his self-understanding. In his memoirs, he draws a picture of a future-oriented strategic manager who was ready to implement radical changes without hesitation: ‘It was extremely important not to stand still but to discover a way forward and follow it with determination.’698

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698 “As a reference to a Finnish card game (with rather racist original connotations) in which whoever has the ‘Black Peter’ at the end of the game loses.”

The newly-appointed management outlined a new strategy for the shipbuilding company during the summer of 1986. Their business idea was simple: to gain competitive advantages in specialised vessels, to survive the recession through aggressive marketing, and to adapt to the low price level by cutting costs. This strategy emphasised customer-oriented sales, tailored production, and systematic interaction with pioneering customers:699 ‘The company’s central approach is the strong interaction between the customer’s objectives and our own shipbuilding expertise in order to achieve successful business concepts for the customer.’700

Picture 15: Wärtsilä Marine’s strategy focused on tailor-made special purpose vessels. The marketing brochure in 1987 boasted that the company has ‘doubled its brain power and tripled the efficiency’ after the merger. A part of Wärtsilä Marine brochure ‘Seven outstanding benefits on the seven seas’.

Wärtsilä Marine was proud to present itself as the ‘world leader as a builder of specialized tonnage’ with a special expertise in ice-going vessels and passenger ships.701 The technology strategy had a firm foundation at the Wärtsilä’s Helsinki and Turku shipyards, which boasted of having completed over half the icebreakers and a third of all cruiser ships in the world.

Unique special-purpose ships, in which the role of design, research, and development was significant, were generally riskier projects than the serial production of standardised vessels in which knowledge accumulation, project learning, and economy of scale eventually diminish production costs and uncertainty. The stable framework of the Cold War shipbuilding system

700 Navigator reprinted in English 1987.
701 Navigator 6/86.
had enabled Finnish shipyards to develop their technological proficiency in ambitious pioneering projects when conventional and less risky vessels had hedged around experimental projects, profit margins were forgivingly wide, and ship series were relatively long. In Wärtsilä Marine’s strategy, there was no longer room for the mundane basic production of simple-type vessels. Shipbuilding according to customers’ needs and wishes became the one and only area of business for the new ‘super flexible business strategy’.

The first challenge was to find customers with whom to develop this bespoke ship-tailoring business. The strategy carried the weight of great expectations of certain pioneering customers, such as the USSR ministries and the Norwegian offshore operators, even though the next page of the very same strategy document stated that trade with the USSR was decreasing, prices were no longer high enough to cover production costs and the depression in the offshore industry was deeper than ever.

Wärtsilä Marine’s marketing material highlighted the competitiveness of the narrow-niche high-quality special production, and even promised ‘prototypes and one-offs with the price level and delivery time of the serial production.’ Yet the company fought the same price war as everyone else in the global shipbuilding market. While Asian competitors enjoyed 20 to 30% lower production costs and European competitors received 20 to 30% of ship prices as governmental subsidies, Finnish costs exceeded the prevailing market prices by 10 to 30% for special-purpose vessels and over 50% for standard ship production. In order to get orders, Wärtsilä Marine had to drop prices below construction costs and accept worse terms for payments.

Wärtsilä Marine started with high expectations. Its trade with the Soviet Union picked up at the beginning of the year, thanks to aggressive marketing and lowered prices. This immediate upswing is clearly visible at the nation-level statistics of the shipbuilding order books that measure the volume of the contracts the Finnish shipyards held at the end of each year. During

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702 For example, the icebreakers designed and built at the Wärtsilä Helsinki shipyard had two to six sister ships that enabled the shipyard to benefit from economies of scale.
706 Memorandum on marketing strategy 17.6.1988, WM strategy folder, private collection Matti Törmä, STX-Turku.
707 For instance, in January 1987, Wärtsilä Marine Laivateollisuus shipyard accepted a contract for eleven Arctic tankers at unit price 7954 SUR with no prepayments. Record of Laivateollisuus Oy board meeting 15.5.1987, LATE pöytäkirjat 8, Laivateollisuus oy, ELKA.
its first year in operation, Wärtsilä Marine doubled the volume of orders on hand, holding the ‘best-looking order book’ in the otherwise miserable Finland.\textsuperscript{708} This boosted optimism.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure31.png}
\caption{The Finnish ship order-book end of the year (Gt). The size of the order book provides better information about future expectations than the statistics on the completed ships. However, the size of the order-book alone is not very revealing about the profitability of the orders. A great deal of the upturn between 1986 and 1987 came from orders that proved to be unprofitable. Data: Awes.}
\end{figure}

Wärtsilä Marine made a loss in its first year in operation, but this was expected and accepted as an inevitable drawback of industrial restructuring. The company budget estimated in May 1987 that the first-year result would generate a loss, as would the second year, but from the third year onwards, the company would be profitable.\textsuperscript{709} Wärtsilä Marine’s balance sheet was strong enough to cover this temporary budget deficit and its parent companies were solid firms with well-established cash reserves. Encouraged by optimism about the future, the company management continued its adventurous behaviour by accepting risky projects at low prices.\textsuperscript{710}

Wärtsilä Marine was a construct not only of the reorganisation of the Finnish shipbuilding industry, but also the re-engineering of production organisation. Wärtsilä Marine introduced a new product factory model (\textit{tuotetehdasmalli}) composed of seven semi-independent business units.\textsuperscript{711} The increasing accountability of the units and the creation of repeatable

\begin{footnotesize}
\textsuperscript{708} \textit{Navigator} 5/1987.
\textsuperscript{709} Expected result in the first three years -441.8 million, -30.6 million and +342 million. Valtiontilintarkastajain kertomus Wärtsilä Meriteollisuus OY:n toiminnan tukemisesta, (Parliamentary Auditor’s Report on Wärtsilä Marine) B1 K3, VP 1990.
\textsuperscript{711} Kalle Id and Bruce Peters have presented that it was originally launched already before Pekka Laine’s tenure. In retrospective accounts, however, it is strongly connected to Wärtsilä Marine as a re-engineering project. Id & Peter, \textit{Innovation and Specialisation}. 2017, 169.
\end{footnotesize}
solutions were supposed to cut construction costs by 20% and delivery time by 30% in only a few years.\textsuperscript{712}

The contemporary press praised the new product factory organisation as a showcase of rational and future-oriented business management. In retrospective accounts, the model was notoriously unpopular and inefficient. Commentators, interviewees, and memoirists in concert blame the new organisational hierarchy, and claim that it only complicated coordination, increased sub-optimisation and sparked unhealthy competition between units. Even if these comments are coloured by change resistance, hindsight, and shipbuilders’ distrust of managers coming from outside, the unanimous and deep antipathy of these secondary sources make a strong case to suggest that, despite the contemporary praise, the organisational reform had serious problems. At least, it failed to reach the target increase in productivity.\textsuperscript{713}

The main way to cut costs was by reducing capacity. The Wärtsilä Marine’s board of directors decided to run down Valmet Helsinki shipyard in April 1987. Closing a large shipyard that was only thirteen-years old and dedicated to the Soviet trade was an uneasy topic in Finnish-Soviet meetings. One of the Sudoimport’s ‘strong men,’ deputy director V.I. Zvegintsev criticised the closure of Vuosaari, which he called the best shipyard in Finland, and complained that soon Finland would close the other shipyards, too.\textsuperscript{714}

However, at that time Sudoimport and other Soviet ship-buyers had no interest or energy in creating a political uproar. After the closure of Vuosaari, Wärtsilä Marine closed the Valmet Laivateollisuus shipyard in Turku in the following summer. Two years after the merger, old Valmet’s new-building shipyards no longer existed. Even if 30% of the company was still owned by Valmet and thus indirectly the state of Finland, Wärtsilä Marine was seen as the last blow to state shipbuilding in Finland.\textsuperscript{715}

Wärtsilä Marine made no considerable breakthroughs in productivity during its second year in operation in 1988. Incomplete organisational change, unclear responsibilities, and hasty decision-making hampered project coordination. The planned 30% savings in material and labour costs had been an ambitious target to begin with, but the goal had escaped beyond Wärtsilä Marine’s reach due to the high inflation rate. Frequent strikes put pressure on the management to raise salaries rather than lowering them. The shortage of skilled workers

\textsuperscript{712} Strategy draft 10.2.1987, WM Strategy folder, private collection Matti Törmä, STX-Turku.
\textsuperscript{714} Minutes WM/L. Jakobsson from a meeting 12.5.1987 in Sudoimport, WM 29, ELKA.
\textsuperscript{715} Navigator 2/1987; Ristilehto, Liiketoimintashokki, 2004, 91,94. On necessity to reduce capacity also Navigator 5/1986.
became worse when Valmet’s old workers preferred to seek jobs in other industries instead of moving to their old competitors’ shipyards; of the 200 new workers that the directors expected to move from Valmet Vuosaari shipyard to Wärtsilä Helsinki shipyard, only 60 came. Consequently, the demand for subcontracting exploded and contracting prices followed the high demand. The gap between calculated and realised costs grew larger.

The shipbuilding business is the art of managing cash flows and balancing between current challenges and future expectations. During the Cold War, Finnish shipbuilders had typically enjoyed luxurious cash reserves thanks to the beneficial pre-payment system in the Finnish-Soviet trade. Now that the returns decreased at the same time as the costs increased, cash flowed out of the company faster than it came in. In November 1988, Wärtsilä Marine forecasted accumulated losses of 1.250 billion before the end of 1990.

When Wärtsilä and Valmet had founded Wärtsilä Marine in 1987, the new shipbuilding subsidiary received the considerable sum of FIM1.5 billion as equity capital. As the parliamentary audit report afterwards verified, on the second day of 1987, Wärtsilä made a bank transfer of FIM1.05 billion and Valmet FIM450 million to Wärtsilä Marine’s account. On the same day, as the audit report continued, Wärtsilä Marine bought shipyard facilities, machinery, and unfinished orders from its parent company and paid 1.73 billion for them in total. As a consequence, Wärtsilä Marine had a strong balance sheet, but only a little liquid cash.

As 1988 turned into 1989, the top management still envisioned some scenarios for how the liquidity crisis could be averted. Besides the nuclear icebreaker project described in Chapter 4, Wärtsilä Marine published innovative plans for tourist submarines. Foreign commentators praised also this bold move: ‘The tourist submarines typify the strategy that has allowed Wärtsilä to survive the deep recession in shipbuilding industry.’ Because water covered 70% of the Earth, underwater cruising had great opportunities to develop into tourism’s next frontier.

Wärtsilä Marine had knowingly entered into a risky business. Without cost calculations and the other paperwork the decision-makers had in their hands at the point of decision, it is difficult to make a difference between adventurous strategy and careless negligence. It is

unclear, for instance, how well the company kept its supervisory board informed. Valmet’s representatives criticised operational management for not having an adequate big picture of the poor situation and reporting inadequately for minority shareholders.\footnote{Parliamentary Auditor’s Report on Wärtsilä Marine, B1 K3, VP 1990.} Also responsibility for the loss-making projects that Wärtsilä Marine had inherited from its predecessor organisations caused considerable friction between Wärtsilä Marine and Valmet.\footnote{In particular, the contract of 11 Arctic product tankers Valmet Laivateollisuus in desperate competition had promised to build for Sudoimport at the price of eight tankers caused bitter controversy between Wärtsilä and Valmet. Indeed, Late had signed a letter of intent regarding this contract in August 1986, when the shipyard in practice was under the control of Wärtsilä Marine’s future directorate and the conclusive protocol had not been signed until 7.1.1987 when Wärtsilä Marine was already formally in charge of the shipyard. PM Valmet/H. Luoto “NO-2, 5A-tyyppisten 11 arktisen tankkerin toimitus/ Valmet Oy:n ja Oy Wärtsilä Ab:n välisen pääsopimuksen 11.1. ja 11.3 kohten soveltaminen”; PM Valmet Selvitykset koskien Wärtsilä Meriteollisuus Oy:n alusprojekteja 14.10.1988, Valmet keskushallinto 714, ELKA; Protocol of Laivateollisuus OY board meeting 15.5.1987, Laivateollisuus Pöytäkirjat 1945-87 folder 8, ELKA.}

The Wärtsilä Marine board meeting in November 1988 addressed production difficulties and current environmental problems. The big Finnish commercial bank Kansallis-Osake-Pankki KOP had stopped lending money to Wärtsilä Marine, but the company gained liquidity from another two Finnish banks, Suomen Yhdyspankki SYP and Postisäästöpankki PSP. The second nuclear icebreaker \emph{Vaygach} was going to steam to Leningrad in the following spring, and it was the last profitable project in the books. The managers felt they had no room for manoeuvres to save the company from incurring losses in the course of the coming two years: ‘[T]here are no chances to influence the years 1988-90 to any significant degree. From the point of view of contracting, these years are already locked down. With the Russians, it might be possible to make arrangements, but they are not decisive. Regarding the big cruisers [for an American cruiser company CCL], we are unable to make changes’. As the company’s vice-president Ingmar Invesgård stated, the managers’ possibilities to have an influence over these years were ‘entirely utopian’.\footnote{“[v]uosin 1989-90 ei voida merkittävästi vaikuttaa. Ne ovat tilauskantamielessä jo lukittuja. Venäläisten kanssa on mahdollista ehkä sopia järjestelyistä, mutta ne eivät ole ratkaisueivä. Suurten ristelijöiden osalta ei ole edellytyksiä siirtää. Vaikutusmahdollisuudet kyseisiin vuosiin ovat täyttä utopia.” Records of WM board meeting 22.11.1988, Valmet keskushallinto 714, ELKA.}

These circumstances, in which the board felt they were forced to stand still and witness losses accumulating, raised the question of responsibility. Wärtsilä’s director Tor Stolpe explained losses as unlucky miscalculations: ‘We expected that the Soviet trade was about to grow, and besides this, the aim was to increase productivity in all ways. [Now] it could be reasonable to present our miscalculations against our initial expectations’.\footnote{WM board meeting 22.11.1988, Valmet keskushallinto 714, ELKA.}

The deep pessimism among the company’s board of directors concerned only the two-year transition period. The year 1991 was expected to be profitable again. This future prospect was
based entirely on the foundation that the Helsinki shipyard would complete the third Taymyr-class icebreaker that year. As the insight provided in Chapter 3 shows, this foundation was not yet secured.

6.4. Bargaining over state interventions, 1988

The west coast shipbuilders, Rauma-Repola and Hollming, that had opted out from the 1986 negotiations, were faced with the same difficult circumstances of low demand, subsidised price-dumping, and dire market predictions as Wärtsilä Marine. In the spring of 1988, the main daily newspaper Helsingin Sanomat announced that Rauma-Repola and Hollming negotiated over merging with Wärtsilä Marine as a part of shipbuilding capacity reduction in Finland: ‘The reason for reorganisations is that neither of the companies has got any new ship orders from the Soviet Union. Because of the reduction of volume, the operations will be reorganised.’

The newspaper’s source for this information was undisclosed. The difficulties the industry was encountering were real, but the conclusion that these problems had led all the three big Finnish shipbuilding companies to new mergers, was still premature.

The state also had its interests in the reorganisation of shipbuilding. However, primary sources were very few and fragmented suggesting that the companies had developed the plans in a very confidential and informal interaction. For instance, the only document in the Minister of Trade and Industry Ilkka Suominen’s correspondence archive indicating that he thought about shipbuilding at this time, was a piece of cardboard Kalevi ‘S’ (Foreign Minister Kalevi Sorsa) had sent to Suominen from his summer cottage in July 1988: ‘Here I think that it would be good to appoint that suggested shipyard committee again – to inform everyone of all the aspects, to share responsibilities and perhaps also to impose some practical measures, not solely for the state but also for the industry’.

The year that had passed since the founding of Wärtsilä Marine had motivated the shipbuilding companies to continue along the path of reengineering. An anonymous, classified, memorandum with Wärtsilä Marine’s logo on it in January 1988 unfolded different scenarios in the Finnish-Soviet trade and declared the necessity of Wärtsilä Marine to adjust its capacity regardless of the actions of its competitors. The memorandum also stated that this time the Finnish shipyards could not muddle through the low season waiting for a coming

boom. No upturn was expected in the near future and the companies could no longer afford the waiting. Even if there was a new shipbuilding boom on its way, it could not save the entire Finnish shipbuilding capacity. This would require that the Soviet Union instantly multiplied its ship imports from Finland, the oil market price peaked at the oil crisis level, and all competitors gave up state subsidies.\footnote{PM WM on perspectives to the developmental possibilities in shipbuilding 26.1.1988, Valmet keskushallinto 714, ELKA.}

In the most pessimistic scenario outlined in the memorandum, the Perno shipyard would build all large ships, Hollming Rauma shipyard all smaller vessels, and the Kotka shipyard would do all the repairs. All the other Finnish shipyards, Wärtsilä Helsinki shipyard included, would be closed down to minimise costs. In the most optimistic scenario, Wärtsilä Helsinki would continue to build ice-going vessels. That would require massive state interventions, coordination, and consensus in the industry, as well as breakthroughs in the negotiations with the Soviets. It was up to the company to make the initiative, the memorandum ended: ‘The government is probably not going to take the initiative and civil servants are not going to have the effect that WM would succeed better than our competitors in Finland’.\footnote{Valtiovalta ei todennäköisesti ota aloitetta eivänkä virkamiehet vaikuta siihen, että WM pärjäisi suhteellisesti paremmin kuin kilpailijamme Suomessa”. PM WM on perspectives to the developmental possibilities in shipbuilding 26.1.1988, Valmet keskushallinto 714, ELKA.}

The Finnish shipbuilding companies Wärtsilä Marine, Rauma-Repola, and Hollming, entered into serious negotiations in the autumn of 1988. On the table was a plan to merge all the Finnish shipyards into one state-supported company. The rationale was to increase control over domestic competition and to support technical specialisation.\footnote{PM Valmet presented to the shipyard committee 19.12.1988, Valmet keskushallinto 714, ELKA.} Competition between the Finnish companies in the mid-1980s had been devastating. Wärtsilä Marine struggled with an excess load while the other Finnish shipyards suffered from an underload. Without cooperation across the organisational borders, shipyards would close their ports in a random order when they ran out of capital. Without coordination, as all shipbuilding companies agreed, the destruction would be detrimental instead of creative. Such deindustrialisation would leave nothing behind to be used as building blocks in the rebuilding of the Finnish shipbuilding industry in the future.

The autumn of 1988, essentially, was about the Finnish Cold War techno-economic shipbuilding system renegotiating the system goal. The goal could no longer be the growth of production and profits but rather the survival of the competitive core. At this stage, the state appeared as an indispensable facilitator of the required radical reforms.

In October 1988, a Ministry of Foreign Affairs memorandum circulated between the highest officers in the foreign trade department and the Ministry of Trade and Industry, as well as
industrial leaders, reviewed the current difficulties of the international competition situation. It ended with a strong recommendation regarding state engagement:

*The situation would clearly seem to require a thorough industrial political decision making, in conjunction with which it should be considered how the competitiveness of the Finnish shipyard industry can be maintained and how the Finnish shipyards can continue in operation.*

The memorandum had no great surprises for anyone reading shipbuilding news at that time: contract prices were low, the Soviet trade had problems, and the West European countries subsidised their shipbuilding. It was revealing, however, that the memorandum was classified as ‘secret’ instead of the usual ‘confidential’. The reorganisation of the Finnish shipbuilding was indeed a sensitive topic.

In the course of industrial negotiations, the shipbuilding companies emerged with a plan to consolidate all the Finnish shipyards into a single company with the working name of ‘Finnmarine’. According to sketches, Wärtsilä would still be the biggest shareholder with a share of 35%, Rauma-Repola the second biggest with 20%, Valmet insisted on having 15% at most, Hollming would receive 10% due its smaller size, and the state would participate with a 20% share.

The common aim of survival did not make the four shipbuilding companies unanimous. Friction occurred especially between the west coast shipbuilders and Wärtsilä Marine. At the beginning, Hollming’s director Aarno Manninen was against state ownership in the new company. According to the minutes of a reorganisation meeting, he had stated that if the state got 20%, then Hollming would not need its 10% share at all. Hollming also took the firm stance that Helsinki shipyard should be closed before Rauma shipyard.

Eventually, Hollming was too small to rock the boat when the bigger companies demanded state-ownership, but the contretemps about the Helsinki shipyard illustrates the presence and significance of personal history and emotions in deindustrialisation. Shipyards are locations of business-oriented production, but they are also entanglements of decades of professional
pride and identity. Personal affection for certain shipyards, whether in Helsinki or Rauma, was not an irrelevant factor when shipbuilding directors talked about the rationality of closures.734

Discussion on the closure of Helsinki shipyard brought up also another dimension of the politics and materiality of massive and locally entangled shipyards. While the shipbuilding companies discussed on the value of certain shipyards for ship production, there were a parallel discussion going on about the value and potential of the shipyard sites for the city development. In the autumn 1986, when the negotiators of Wärtsilä Marine had indicated the possibility of shipyard closures, the city of Helsinki lobbied for closing the Wärtsilä Hietalahti shipyard that was located in the narrow location of downtown Helsinki next to wealthy city districts. After Wärtsilä Marine opted for closing Vuosaari shipyard instead, municipal decision-makers concentrated on creating real estate development plans for Vuosaari area.735

Rauma-Repola and Hollming also refused to agree with Wärtsilä and Valmet on the book values of Wärtsilä Marine’s real estate that the rationalisation process would leave empty. Instead, Wärtsilä and Valmet were to found a real estate company that would buy the Vuosaari, Laivateollisuus, and Luonnonmaa shipyards as well as the Turku repair yard, and the profits would be used to offset Wärtsilä Marine’s losses before the consolidation of the new shipbuilding company.736

In the beginning of December 1988, the shipbuilding companies officially published their reorganisation negotiations. The Ministry of Trade and Industry appointed the third joint shipyard committee to prepare the merger, very similarly to the two previous committees in 1977 and 1983.737 The Shipbuilding Industry Committee of 1988 was chaired by the Ministry’s Chief Secretary Bror Wahlroos. The Committee had representatives from both the public and private sector, including high civil servants from Ministries and Finance and Foreign Affairs and the directors of the major shipbuilding companies.738 The task of the committee was to

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734 This same goes with Wärtsilä Marine’s decision to close Valmet Helsinki shipyard in Vuosaari instead of the older Wärtsilä Hietalahti shipyard in the narrow location of downtown Helsinki. Wärtsilä’s decision-makers had such a long personal working history at Helsinki shipyard that they would hardly have opted for Vuosaari instead of the Hietalahti shipyard.


736 PM Valmet/MJ on founding. A real estate company 30.11.1988; PM WM/Grönbärj on WM’s real estates 28.11.1988, Valmet keskushallinto 714, ELKA.

737 Valmet/MJ minutes from a negotiation on founding shipyard industry working group 2.12.1988, Valmet keskushallinto 714, ELKA.

start negotiations with the government on the measures required to continue shipbuilding in Finland in the new situation.\textsuperscript{739}

How novel was the situation really in 1988, compared with the previous negotiations that preceded the founding of Wärtsilä Marine? In early paper work, the Shipbuilding Industry Committee of 1988 verbatim cited the memorandum that had been submitted by Wärtsilä and Valmet to the government on 12\textsuperscript{th} May 1986 regarding the reorganisation of shipbuilding in Finland:

\begin{quote}
'We cannot take as a premise that Finnish shipyards implement their own measures. That would lead to fragmentation of resources and unprofitable production. The target should be to maintain the healthy core of the Finnish shipbuilding industry that can compete in long run in the global market for special-purpose vessels'.\textsuperscript{740}
\end{quote}

In that sense, the ultimate goal was the same in the 1986 and 1988 negotiations. What had changed in two and a half years, though, were the future expectations and the environment of the shipbuilding system; the problems with the Soviet trade were worse than expected and western competition with subsidies was sustained longer than had been feared. In terms of numbers, the change appeared even more radical, as the target now was to descale the Finnish shipyard production from 10 000 workers to only 3000 workers.\textsuperscript{741}

The shipbuilding company attached strict demands for state interventions as the essential preconditions to the reorganisation. The industrial negotiators asked the state to grant a loan of half a billion, part of which could be settled against the shipyard closure expenses.\textsuperscript{742} Together with low-interest financing, the shipbuilding industry asked the state organisations to provide additional guarantees for loans of up to a billion. Because international bankers generally regarded shipbuilding as a high-risk industry, shipyards had problems getting affordable financing schemes without state backing. In addition, the shipbuilding industry wanted a similar tax reduction law as Wärtsilä Marine had received in 1986. The ‘Lex Wärtsilä Marine,’ appeared as a pivotal precondition particularly to Hollming, but not to the others. Wärtsilä’s Tor Stolpe was at least ready to leave Hollming outside the arrangement if the taxation law became a stumbling-block.\textsuperscript{743}

\begin{flushleft}
\textsuperscript{739} Shipbuilding industry committee 1988 report, 1989.  \\
\textsuperscript{740} “Ei voida lähteä siitä, että Suomessa eri telakat toteuttavat erillisiä ratkaisuja, joiloin ajaudutaan tilanteeseen, jossa toimenpiteet johtavat resurssien hajaantumiseen ja kannattamattomaan toimintaan. Tavoitteena tulee olla, että Suomen telakateollisuudessa säilytetään terve ydin, jolla on mahdollisuus kilpailua myös pitkällä tähtäyksellä maailman erikoisalusten markkinoilla”. PM on continuation of Finnish shipbuilding reorganisation 8.12.1988, Valmet keskushallinto 714, ELKA.  \\
\textsuperscript{741} PM on continuation of Finnish shipbuilding reorganisation 8.12.1988, Valmet keskushallinto 714, ELKA.  \\
\textsuperscript{742} PM on the industrial standpoints regarding the negotiation results and conditions of the shipbuilding working group 19.12.1988, Valmet keskushallinto 714, ELKA.  \\
\textsuperscript{743} Additional PM on reorganisation of Finnish shipbuilding industry 19.12.1988, keskushallinto 714,
\end{flushleft}
Crucial for Wärtsilä Marine and Rauma-Repola was the state becoming a shareholder. In practice, as the industrial representatives of the committee suggested, the state could sell part of Valmet’s shares and bring in the revenue as venture capital for the new shipbuilding company. Valmet was not against the arrangement as long as it was not forced to increase its stake in shipbuilding.\textsuperscript{744} According to Wärtsilä and Rauma-Repola, the state standing behind the shipyards would increase the company’s credibility from the point of view of customers and financiers, and indicate abroad that Finland would not abandon shipbuilding.\textsuperscript{745}

The companies tried not to conceal or downplay the risks involved in the venture when they bargained with the state. Rather, they used the risks as their key argument to negotiate over state involvement: ‘Companies have suffered considerable losses in competition against subsidised [foreign] industry and consider that as long as the future prospects of the industry remain insecure and the competition situation is unhealthy, the state should come to share the risks of the [shipbuilding] industry in Finland’.\textsuperscript{746}

In the early phase of Finnish industrialisation, the Finnish government had often adopted the role of an entrepreneurial state and taken the initiative in risky but innovative branches of national importance. Now, the Finnish shipbuilding system offered the state a similar role of risk-carrier, but for a mature industry. Industrialisation was, again, a national project: ‘Because the issue concerns the Finnish industrial and labour policy as a whole, it cannot be left for private companies to tackle alone’.\textsuperscript{747} In exchange, the industry offered the state the possibility to support this nationally important industrial branch with the consolation that ‘if the risks are not realised, the state’s financial losses from this venture remain small’.\textsuperscript{748}

Chief Secretary Wahlroos presented the reorganisation plan to the Ministerial Committee on Economic Policy. Ministerial committees are not official decision-making bodies but merely arenas for governmental discussion in a small group of main decision-makers on the subject matter. The consensus between the committee members, the Prime Minister, the Minister of
Finance, the Minister of Trade and Industry, and the Minister of Labour, usually outlined the will of the government as well.

The protocols of ministerial committees were not public documents, but the permanent member of the Economic Policy Committee, at the time high-ranking civil servant in the Ministry of Trade and Industry Risto Ranki, published his notes from the committee meetings as a part of his study on the role of the Ministerial Committee.\(^\text{749}\) As Ranki notes, there was no obligation for Wahlroos to bring the shipbuilding committee negotiations to the Ministerial Committee. That he did that twice in December 1988, on 20\(^\text{th}\) and 23\(^\text{rd}\), indicates the political gravity of the shipyard crisis. Because the decisions had the potential to affect thousands of jobs, it was particularly important for the Ministry of Trade and Industry to gain solid backing from the government.\(^\text{750}\)

A further interesting aspect of the Ministerial Committee meetings was how careful they have been with written information. Although the committee’s paperwork was not public at the time it was created, according to the Finnish law of transparency, governmental archival folders are declassified after 25 years if they pose no exceptional threat to the state. Thanks to this procedure, agendas and memoranda that had been circulated within the committee can typically be found in personal or institutional archival collections. However, these folders include only general agendas on the meetings regarding the reorganisation of shipbuilding 1988 to 1989. This implies that written documents were not delivered at all, or they were collected back. The outstanding secrecy highlights the sensitivity of the topic; from the point of view of some ministers and ministries, the national industrial policy was a more delicate issue than, for example, arms trade.

The committee’s civil servants were critical towards the state’s engagement in shipbuilding more than it already had through Valmet.\(^\text{751}\) There were warning international examples from Sweden and the UK, where the state owner had not succeeded in saving the shipyards but instead become responsible for an expensive, loss-making business. The danger was that the state ownership would demotivate the companies to invest their own resources that would eventually lead the private companies to dispose of their shipyards to the public sector. Wahlroos presented his personal opinion that generous state aid would only encourage the shipyards to ask for more.\(^\text{752}\)


The minister in charge of industrial policy was Ilkka Suominen (1939–) of the conservative National Coalition Party. Shipbuilding representatives had kept him updated with the reorganisation plan during the autumn to set the tone for the government’s decision. According to memoranda that Valmet representative Mauri Jaakonaho made regarding his conversation with the minister, Suominen had not strictly rejected the state ownership of the new shipbuilding company. In fact, in late November, ‘Suominen had noted that this [selling Valmet’s shares to buy shares in the new shipbuilding company] would be an occasion for the state to engage in active industrial policy by transferring venture capital from one company to another’.753 If his note was ironic instead of a policy statement, it was left unnoticed by the activists of the shipbuilding reorganisation.

At the Ministerial Committee meeting, Suominen chimed in with the Wahlroos’ opinion that state ownership was out of the question, but he was willing to approve most of the other measures on the agenda such as the tax reduction law and improvements in the terms of state subsidised financing. According to Ranki’s notes, Minister Suominen’s own target was the descaling of the Finnish shipbuilding industry at minimal expense for the public sector. He did not want to get rid of shipbuilding entirely, however. Shipyards were locally important employers and they were useful in Finnish international image-building as they showcased the country’s high-tech competence.754 Even though he noted that one could not count on Soviet orders arriving to rescue the Finnish shipyards, he appeared to be quite positive that the reduced action plan without state ownership would be enough to keep the shipyards in business for at least a couple of years.755

The ministerial committee had two dilemmas. The first was that they had to make their decisions regarding shipbuilding policy based on asymmetric information. The ministers were not convinced that the state ownership was indeed a non-negotiable condition for the industry as the companies claimed. Neither did they know whether the shipyard crisis was indeed as dire as the company directors assured.

The second challenge was to formulate the state’s answer in a way that gave the right impression both within Finland and abroad. The global overcapacity in shipbuilding had resulted in a complicated situation where each closure of a shipyard was a step towards easier market competition and benefit for those who survived. No national government had an interest in volunteering to abandon their domestic shipyards to help the others. Most preferred to wait for others to make the politically unpleasant decision. In circumstances like

753 “Suominen oli todennut, että tässähän olisi tapaus, jossa valtio voisi ryhtyä harrastamaan aktiivista teollisuuspolitiikkaa siirtämällä riskipääomaa kohteesta toiseen.” PM Valmet/MJ (Mauri Jaakonaho) "Tilanneraportti: telakkateollisuuden strukturoidut 22.11.1988", Valmet keskushallinto 714, ELKA.
this, the Finnish government could not make a decision that would imply abroad that Finland was going to withdraw its support for shipbuilding.\textsuperscript{756} Neither could the government make a decision that would signal to the industry that the shipyards could rely on unconditional state support in their difficulties.\textsuperscript{757}

The opinion of the civil servants in the Shipbuilding Industry Committee of 1988 and the position of the Ministerial Committee on Economic Policy formulated the state’s official answer to the requests from the shipbuilders. At the beginning of 1989, the government refused to invest any venture capital in shipbuilding. The Wärtsilä board of directors opted out from the merger.\textsuperscript{758} The shipbuilding industry left the reorganisation negotiations.

Afterwards, the report of the Shipbuilding Industry Committee of 1988 was a central piece of evidence of the prevailing economic difficulties in shipbuilding at the turn of the year. The Supreme Court of Finland discussed the responsibility of high civil servants when the Finnish Board of Export Guarantees\textsuperscript{759} granted financing for Wärtsilä Marine without sufficient collateral in February 1989. The Court concluded that at least Bror Wahlroos, who was a member of the export financing board, should have been aware of the economic risks the shipbuilding credits involved. According to Wahlroos’ defence, he had been convinced that the shipbuilding industry at that time had exaggerated the situation dramatically and overstated the crisis to get state support.\textsuperscript{760}

\textbf{6.5. The downfall of the industrial leader, 1989}

In the spring of 1989, Wärtsilä Marine sunk deeper into economic difficulties. Wärtsilä’s annual report in May 1989 showed that the year had been lossmaking, generating a loss of 273 million. The Wärtsilä conglomerate had different branches ranging from glassware to sanitaryware, but marine technology comprised 44% of Wärtsilä’s total invoicing. Vertical integration between Wärtsilä’s shipbuilding branch and diesel engine production amplified Wärtsilä Marine’s negative impact on the corporation’s result. Director Stolpe tried to reassure Wärtsilä’s shareholders by stating that the losses were only a temporary nuisance and an unlucky accident resulting from ship orders that ‘appeared to be more unprofitable than what


\textsuperscript{758} WM sisäinen tiedotus 20.1.1989, Valmet keskushallinto 714, ELKA; Letter of Intent 3.1.1989, Valmet keskushallinto 714, ELKA.

\textsuperscript{759} Finnish Centre for Export Financing, Valtion takuukeskus VTK was founded in 1989 in a merger of Finnish Export Credit Ltd, Suomen Vientiluotto SVL ja The Finnish Board of Export Guarantees, Valtion takuukeskus VTK.

was expected’.\textsuperscript{761} From the point of view of a publicly traded company, problems with shipyards made the whole Wärtsilä corporate group appear to be risky investment.

Yet Wärtsilä company group had excellent financial standing and an equity ratio over 35%. As the business weekly \textit{Talouselämä} analysed, ‘the magnificent equity provides leverage for the corporation if its directorate is able to use it. Some bad years won’t hamper the foundation of the firm but if investors lose their trust in the company, corporate financing will become expensive.’\textsuperscript{762} From the outside, the shipbuilding subsidiary was in considerable distress but still not quite wrecked.

Pekka Laine, who was seen as the figurehead of the new company, suddenly left the shipbuilding subsidiary and moved to the Wärtsilä corporation, where he replaced Tor Stolpe as the corporate director. His successor at Wärtsilä Marine was Kari Airaksinen, who held the position for only four months before economist Ingebrigt Invesgård was appointed as the new CEO. Both Airaksinen and Invesgård had worked as vice-presidents at Wärtsilä Marine, and unlike Laine, had previous experience in maritime business and engineering.

Two factors especially contributed to the deceptive illusion of solid economic standing that nurtured optimism about Wärtsilä Marine. Firstly, the company rounded up its estimations and communicated them without revealing the risks and uncertainty these numbers included. For example, when Wärtsilä Marine applied for export credit guarantees for a contract of large cruiser ships in February 1989, it reported that the production costs equalled the contract price. Even though the export credit guarantee board appeared to be aware that Wärtsilä Marine had sold these projects at a price that was below the production costs, they were under the impression that the other contracts and potential state subsidies would offset losses.\textsuperscript{763} In addition, the corporate accounting had a systematic practice of overestimating future returns and underestimated costs. The aim was, as stated by the parliamentary audit report afterwards, to make Wärtsilä Marine’s balance sheet look stronger and avoid bankruptcy in the spring of 1989.\textsuperscript{764} The company was gambling to play for time.

The second factor that delayed the state actors from realising the gravity of Wärtsilä Marine’s problems was their long experience of the Cold War ship trade. Afterwards, the state decision-makers defended themselves against critics by explaining that they had trusted in Wärtsilä Marine’s business plan and its managers’ capability to evaluate the risks it was taking.\textsuperscript{765} This.

\textsuperscript{761} Tor Stolpe in Wärtsilä’s annual report 1988.

\textsuperscript{762} \textit{Talouselämä} 17/1989.

\textsuperscript{763} Supreme Court decision 107:1995.

\textsuperscript{764} Parliamentary Auditor’s Report on Wärtsilä Marine, B1 K3, VP 1990, 8-10.

\textsuperscript{765} As the State auditors noted afterwards, business that was based on loss-making orders should have been understood as risky despite of company’s long experience and partial state-ownership. Parliamentary Auditor’s Report on Wärtsilä Marine, B1 K3, VP 1990.
rather vague explanation may have some truth in it. The big shipbuilding corporations had been appeared infallible for the greater length of the Cold War.

In the summer of 1989, creative accounting practices could no longer hide the fact the company’s reserves were almost empty. An interim financial statement in the summer of 1989 forecasted FIM1.225 billion accumulated losses by the end of the year. In July 1989, Marine’s directors and owners contacted Ministers Ilkka Suominen and Erkki Liikanen asking for public intervention to bail out the company. A high-ranking civil servant from the Ministry of Finance, Juhani Kivelä, was given two weeks to investigate Wärtsilä Marine and to propose an action plan. He suggested that the state would buy the shipbuilding company for a nominal fee and invest half a billion of new venture capital in the company to help it back on its feet.

The Ministerial Committee on Economic Policy discussed the issue at the beginning of August. From the government’s point of view, the main problem was reliability. On the one hand, the problem was the reliability of the government and consistency in its shipbuilding policy. After all, the government had only half a year earlier refused to increase its shares in shipbuilding. On the other hand, the problem was the reliability and credit rating of Wärtsilä Marine. It was in the government’s interest to avoid bankruptcy before Wärtsilä Marine had completed the ship orders it had on hand. If the state failed to give sufficient assurances of the continuing of the production, a widespread panic might break out that would frighten off all the subcontractors and financiers. As Minister Liikanen noted, the presence of a corpse changes the atmosphere.

Shipbuilding’s future expectations were now very different to the optimism of three years earlier. Chief Secretary Wahlroos diagnosed ‘insiktströghet,’ a case of intransigence. Wärtsilä Marine’s strategy had been built on the fundamental principle that the Soviet trade would remain strong, rivalry European shipbuilding countries would terminate their state aid policies, the Finnish economy would not heat up, and new orders would be profitable. That none of these presumptions turned out to be true was, according to Wahlroos, not a result of ‘conspirators but stupidity.’

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768 Ranki, Haltia vai haltija, 2000, 321.
769 Discussion notes Ministerial committee on economic policy meeting 3.8.1989, Collection of Ilkka Suominen 80, PTA.
770 Discussion notes Ministerial committee on economic policy meetings 3.8.1989 and 10.8.1989, Collection of Ilkka Suominen 80, PTA.
The state had considerable financial commitments at stake as Export Credit Ltd had borrowed over FIM1.2 billion for Wärtsilä Marine without sufficient collateral.\(^{771}\) The government that had preferred minimal engagement in the economy, then, was forced to take responsibility for a private company. As the parliamentary auditors pointed out, the state was in an unfortunate deadlock position because of its own organisations.\(^{772}\)

Because Wärtsilä was a publicly listed company, concealing the financial problems was not legally an option. The news about Wärtsilä Marine's financial problems broke in leading newspapers in August. The publicity made—as predicted—shipyards' subcontractors and buyers anxious. Subcontractors stopped working at Wärtsilä Marine's shipyards, and customers were reluctant to pay their scheduled pre-payments. Without public confidence, the company could get neither subcontractors nor cash to pay for raw materials or work. The Finnish credit agencies refused to guarantee any new loans. The Wärtsilä corporation ceased to provide short-term financing to its subsidiary. This jeopardised the investors’ hope that the company would be able to deliver the ships according to contracts.

The most urgent task was to make customers and subcontractors to calm down, stop speculations, and continue production. To this end, the parent companies and the state, represented by Bror Wahlroos, entered into negotiations with the two commercial banks, Suomen Yhdyspankki (SYP) and Postipankki (PSP). The stakeholders agreed on a shared financing package that would guarantee pre-delivery financing to the shipyards, for as long as it would take to complete the orders in hand.\(^{773}\)

According to the financing package, the state promised to cover half of the losses, and the parent companies and the two commercial banks a quarter each. The financing package also had an unrevealed supplementary protocol that restricted the liability of the commercial banks. The losses exceeding FIM700 million were not to be shared between the state, banks, and the owners but covered by the state and the parent companies at a ratio of two to one.\(^{774}\) Consequently, the worst-case scenario for the state was that it would end up in the situation it had tried to avoid throughout the shipyard crisis: having financial liabilities for a private company, without any limit.

At the same time, the Wärtsilä corporation decided to give up its shipbuilding branch, which had traditionally constituted the essential backbone of the business group. At the end of August, it sold its majority of 51% of Wärtsilä Marine at the symbolic price of 4 FIM—a price

\(^{771}\) A practice that had privileged WM over other shipbuilding companies Rauma-Repola and Hollming, who were required to put assets as collateral against debt obligations. *Suomen Kuvalehti* 35/1989.

\(^{772}\) Parliamentary audit report, Parliamentary documents WM B1, vp1990, 27, 34.


\(^{774}\) SK 35/1989.
too low to cover even the costs of the pens and papers used to sign the contract. By this action, Wärtsilä managed to clean up its financial statement as Wärtsilä Marine was no longer a subsidiary company. Ironically, Pekka Laine, now as the president of Wärtsilä corporate group, was at the front line when it came to discarding the shipbuilding division he had managed only half a year before.

To increase the reliability of Wärtsilä Marine, the state and commercial banks took over the directorate and appointed Wahlroos as the new chair of the board. Wahlroos was a ‘man for a transition period’. The target was no longer to restructure Finnish shipbuilding industry but control its downfall and cost accumulation.

This study has previously addressed the closely interrelated public and private networks in Finland that makes it sometimes difficult to demarcate between governmental and commercial agents. As a highly-ranked civil servant appointed as a director of a private company, Bror Wahlroos came to personify this state-industry helix.

In the autumn of 1989, when Wahlroos used his public authority to assure the press that the future of Wärtsilä Marine was taken care of, the strikes calmed down and the subcontractors continued their deliveries. Afterwards, it was debated whether the continuing financing was a promise given by Chief Secretary Bror Wahlroos as a representative of the state, or rather a hopeful wish expressed by Chair of the Board Bror Wahlroos. Ten year later in 1999, Finland’s Supreme Court came to the decision that it had been impossible for subcontractors and buyers to distinguish between statements given by Wahlroos as a representative of the state or a representative of a company. In the autumn of 1989, however, the line separating the state and the company remained blurred and confusing.

A further issue that confused the public audience was that the secret protocol appeared not to be very secret, considering how often its participants had to deny it. As Wahlroos reasoned to Helsingin Sanomat: ‘I do not know anything about secret protocols, because nobody can know anything about secret issues’. These questions ended only after Suomen Kuvalehti, a quality weekly magazine, published the secret supplementary protocol of the financing package.

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778 To further complicate the picture, his son Björn Wahlroos was a manager and on the board of directors of Wärtsilä Marine’s bank SYP.
agreement in September. The piece of news certainly drained somewhat the general confidence in public decision-makers, but it had no tangible consequences. The subcontractors and customers generally trusted that the August financing package was to keep the company solvent until the uncompleted ships were finished.

In October 11th, Wärtsilä Marine published a new financial statement. No matter how pessimistic its estimations in the summer had been, now only three months later they actually proved to have been optimistic. Figure 32 shows how the forecast was roughly a billion FIM worse than had been expected for October, compared to the situation in June. Commercial banks stopped their financing.

![Figure 32: WM's results as estimated in the interim financial statements in 30.6.1989 and 11.10.1989, MFIM. Source: Parliamentary Auditors’ Report, B1 K3 vp1990.](image)

The Wärtsilä Marine directorate, that is the state, the banks, and the two parent conglomerates, did not have many options. None of the options was rewarding in either political or economic terms. The first option was to continue paying Wärtsilä Marine’s bills until the shipyards had delivered the uncompleted ships to their buyers. The uncertainty of the potential public expenses was a more urgent problem than the expenses themselves. Politically, this first option would mean the same as the state opening a checking account without a credit limit for a private company.

The second option was to discontinue the financing package and to declare the company bankrupt. This option would mean thousands of unemployed metalworkers and a long array of bankrupted small entrepreneurs who had worked as subcontractors. The probability that

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783 Discussion notes Ministerial committee on economic policy meeting 13.10.1989, 17.10.1989 and 20.10.1989, Collection of Ilkka Suominen 80, PTA.
the creditors would get their money back in liquidation was not high in this option either. There was no market for uncompleted special-purpose vessels and secondhand shipyards.\textsuperscript{784}

Government support for the disastrous company was a difficult economic and political dilemma.\textsuperscript{785} At that point, the government had little trust in numbers coming from the shipyard industry. They did not trust the commercial banks and companies either, but suspected that both parties tried to transfer their liabilities to the public sector. Some ministers implied that the bankruptcy would be the best option for everyone but the state, and that the commercial banks were playing on the government’s nerves waiting for the state to surrender and accept a larger share of the liabilities.\textsuperscript{786}

After long discussions, the Finnish government came to the conclusion that immediate bankruptcy, even though it meant increasing unemployment, would be a politically easier solution than trying to keep the company afloat with taxpayers’ money. The financing package, that was meant to prevent bankruptcy, now became the excuse for the government to opt for bankruptcy because it had not clearly declared limits to state support. On Monday 23\textsuperscript{rd} October, the Wärtsilä Marine board of directors filed for bankruptcy.\textsuperscript{787}

\textsuperscript{784} Discussion notes Ministerial committee on economic policy meeting 13.10.1989, 17.10.1989 and 20.10.1989, Collection of Ilkka Suominen 80, PTA.
\textsuperscript{785} PM 3.11.1989, Koivisto 13, NA; Discussion notes Ministerial committee on economic policy meeting 27.10.1989, Collection of Ilkka Suominen 80, PTA.
\textsuperscript{786} The Ministerial Committee exercised extra care when handling the Wärtsilä Marine case. The members of the committee received no written memoranda in the meetings or they were collected back. Besides Risto Ranki’s publication, and the discussion notes in Ilkka Suominen’s collection, there is not much firsthand information from the discussions. Juhani Kivelä, high-ranking civil servant in the Ministry of Finance, made hand-written notes on the meeting agenda. These notes are generally consistent with Ranki’s notes. Juhani Kivelä’s copy of the agenda of Ministerial Committee on Economic Policy meeting 27.10.1989, Talouspolitiitten ministeriövaliokunnan esityslista 27.10.1989, UAC:11, Valtiovarainministeriön tulo- ja menoarvio-osaston arkisto/ johtoryhmän ja valiokunnan asiakirjat, NA.
Primary sources on communication after Wärtsilä Marine’s bankruptcy in available archival collections are extremely limited. The silence of archives may indicate two things: either the event was too insignificant to write about or it was too sensitive. The few available notes related to the Wärtsilä Marine indicates that the latter was the case. In this brief note with a terse style (apparently from the Member of Parliament Mikko) Pesälä compliments Minister Suominen on his good work, Collection of Ilkka Suominen, folder 80, PTA.

Afterwards, the bankruptcy had widespread consequences for national regulation for accounting practices, and resulted in several legal proceedings. Vigorous debate over liabilities circled around the question of at what point the company decision-makers should have realised that the environmental assumptions were unrealistic, the strategy was unworkable, and the operative management had serious problems. In public, Wärtsilä Marines’ directors and owners accused external forces, high governmental subsidies in rival countries, and abruptly risen costs in Finland and the Soviet Union. Internal reports in

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790 Pekka Laine’s letter to Wärtsilä’s shareholders December 1989, Private collection of P. Jumppanen;
Wärtsilä and Valmet written by experienced shipbuilding engineers placed the blame for the downfall on the top management that had tried to re-engineer an industry it did not know.\textsuperscript{791}

The most momentous change took place in attitudes towards the state-industry relationship and shipbuilding in Finland. Contemporary and retrospective commentators alike have marked Wärtsilä Marine’s bankruptcy as a watershed in Finnish Cold War industrial history: a big, prestigious shipbuilding company, strongly engaged in the Soviet trade, went bankrupt without the state bailing it out.

\textbf{6.6. New beginning, 1990}

The Helsinki courthouse declared bankruptcy on October 23\textsuperscript{rd} and Wärtsilä Marine’s vice-president Martin Saarikangas announced the news at the Helsinki shipyard. Saarikangas was a shipbuilder by education and had worked at the Helsinki shipyard since 1959. Since 1987, he had mainly stayed in the USA as a sales manager promoting Wärtsilä’s cruiser ships. Saarikangas had returned in August 1989 to replace the manager of the Helsinki shipyard who had accidentally died during a running race around the shipyard.\textsuperscript{792} During his time in the States, Saarikangas had become familiar with the American bankruptcy code. In a short time he decided to continue shipbuilding in Helsinki by reconstructing a new company from the wreckage of Wärtsilä Marine.

While the Finnish bankruptcy legislation dated back to the 1860s and required immediate liquidation in order to pay back privileged creditors, the US Bankruptcy code chapter 11 permitted bankruptcy trustees to reorganise and operate as a debtor’s business in order to minimise losses. Saarikangas’s plan was to interpret the Finnish law in the American spirit. His biggest American customer Ted Arison, the director of Carnival Cruise Line (CCL) supported the endeavour. CCL had interests in the endeavour since it was the buyer of two cruiser ships which now lay unfinished at the dock of Helsinki shipyard.\textsuperscript{793}

Large cruise ships are big investments for cruise companies and problems in their delivery endangered future cash flows. The delayed delivery of a cruise ship meant the shipping company would be missing the ship it had already booked full. The bankruptcy news

\textsuperscript{791} Christian Landtman, \textit{Anförande för OY Wärtsilä AB:s styrelse 90/01/05}. Landtman’s private collection; Memorandum 14.6.1990. Törmä, \textit{Miten Wärtsilä meriteollisuus saatettiin konkursiin?} Matti Törmä, personal collection.

\textsuperscript{792} Saarikangas himself has called his years in the USA as exile, highlighting his separation from the WM operative management. Some other interviewees suggest that Saarikangas was never totally absent but occupied a small windowless office at the Helsinki shipyard.

\textsuperscript{793} Saarikangas interview 5.2.2014, Haavikko, \textit{Iso-Masa}, 127-143.
immediately dropped the CCL’s stock by 8% on the American Stock Exchange and forced the company to cancel reservations for the coming spring. From the ship buyer’s point of view, uninterrupted production was the least bad option, even if they had to accept worse conditions and additional payments. This gave Saarikangas some advantage in negotiations.

Negotiations between Saarikangas and CCL proceeded rapidly. Unlike the other shipping companies that had contracted with Wärtsilä Marine, CCL owned the unfinished hulls and did not need permission to sell them from the Wärtsilä Marine bankruptcy estates. In a week, SYP and the other customers, except for one shipping company, joined negotiations for a new shipbuilding company. The new company would complete Wärtsilä Marine’s projects with Saarikangas as a director and with shipping companies, SYP, and the state as its shareholders.

The economic rationale to continue with production in as agile a fashion as possible was now imperative for all. Yet, sharing the same goal did not create consensus and coordination. Instead, the negotiation process was hasty and disorganised, hampered by confrontations and distrust among the main stakeholders. When the big creditors—the two commercial banks, state organisations, and the shipping companies—started to outline a future action plan on how to complete the ships, they were in a great hurry as supply chains and subcontractor networks were falling apart and Wärtsilä Marine’s old staff was going to be dismissed with two weeks’ notice. As an illustration of the confusion, after the Finnish government had finally agreed that the state would participate in the new shipbuilding company, the other contracting parties learned that they had signed the already outdated version of the agreement.

The new shipbuilding company was officially registered on November 11th and was named ‘Masa-yards’ after Saarikangas. It had a share capital of FIM570 million comprising of 100 million from SYP and state, and 170 million from ship buyers. In addition, it received FIM200 million unsecured credit from Wärtsilä. Valmet, apparently disappointed with Wärtsilä and shipbuilding in general, declared promptly that it had nothing to do with the new company. On November 8th, a day before the work was to end after Wärtsilä Marine’s bankruptcy at the shipyards, the creditor meeting authorised the bankruptcy estates to rent out Helsinki and

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796 PM 3.11.1989; Notification from SYP and Wärtsilä and VTK’s answer to that, both 1.11.1989. Koivisto 13, NA.
797 Valmet’s notification 1.11.1989 on its conditions concerning WM’s financing package. President Koivisto’s collection 13, NA.
Turku shipyards and to sell the unfinished ship hulls to Masa-yards.\textsuperscript{799} After all the trouble, shipbuilding continued in Helsinki and Turku almost without interruptions.

The \textit{Financial Times} described Masa-Yards as a new chapter in the history of Finland’s shipbuilding.\textsuperscript{800} This was correct, at least from the state’s point of view. State ownership of a united Finnish shipbuilding company had been suggested several times during the past decade, the last time in the summer of 1989. Only in the aftermath of the bankruptcy of 1989 did the government not reject the proposal. The state became a shareholder because it was best of the bad options.\textsuperscript{801} As a shareholder, the state had some possibilities to control the downfall and to minimise the total expenses that the shipbuilding bankruptcy was about to cause to the public sector.\textsuperscript{802}

In principle, Masa-Yards was a brand-new company. The distinction between Masa-Yards and the failed Wärtsilä Marine was highlighted in all communications: ‘After the scandal, there could be no connections’ between Wärtsilä Marine and the Masa-yards, as Saarikangas stated in a meeting in Moscow.\textsuperscript{803} In practice, Masa-Yards continued building Wärtsilä Marine’s old ships at Wärtsilä Marine’s old shipyards with Wärtsilä Marine’s old equipment and machines, and it employed most of Wärtsilä Marine’s old staff. This discontinuity in the company history but continuity in production and organisation was confusing and involved questions of both practice and principle.

In the manufacturing industry, it may be possible to take over a factory, restart the machines, and continue production after a bankruptcy as if nothing had happened. Shipbuilding was different from manufacturing. The shipyard was dependent on networks of subcontractors, some of whom had very specific and unusual fields of expertise. Rebuilding trust between the shipyards and the subcontractors was not easy. The subcontractors who had lost their revenues to bankruptcy, had little trust in the state either, as its representatives had assured them that Wärtsilä Marine was creditworthy.

Wärtsilä Marine’s old subcontractors claimed their outstanding debts from Masa-Yards that as Wärtsilä Marine’s successor company, appeared to be the only existing legal unit that could address their problems. Disagreements and discontent resulted in a curious situation in which

\textsuperscript{799} PM WMkp 27.9.2013 on creditors’ meetings, WMkp.
\textsuperscript{800} FT 2.11.1989.
\textsuperscript{801} PM SYP on WM’s bankruptcy and the continuance of the shipbuilding 20.10.1989; PM SYP/Hirvonen 14.11.1989 on shipyard crisis after 27.10.1989; PM SYP for the Finnish government 27.10.1989. President Koivisto’s collection 13, NA.
\textsuperscript{802} VTK memorandum to Economic policy ministerial council 30.10.1989; Esko Rekola to President Koivisto, memorandum on shipyard agreement 31.10.1989, Koivisto 13, NA; Ranki, \textit{Haltia vai haltija}, 330-338.
\textsuperscript{803} Minutes of meeting in Morflot 10.11.1989, WM 30, ELKA,
the employers’ organisation, the Federation of Finnish Enterprises, went on a strike against a shipyard company, Masa-Yards, that had barely started to operate.

The government’s mission in November and December remained the same as in August: to draft an emergency plan to calm down the situation, restore subcontractors’ confidence, continue production, and prevent any further unnecessary bankruptcies. When Wärtsilä Marine had started, the Finnish government had been led by the social democrat Prime Minister Kalevi Sorsa 1983–1987 and the policy had concentrated on the number of unemployed blue-collar workers. At the end of Wärtsilä Marine, Harri Holkeri’s liberal government (1987–1991) focused on small independent enterprises. Like shipyard workers, the subcontractors were locally concentrated, united in their claims from the state, and equally mad at big business.

The government granted FIM50 million unsecured credit to Masa-Yards for compensations for subcontractors. Masa-Yards paid compensations to cover roughly one sixth of the payments the subcontractors had claimed and allocated the money to the suppliers that the shipyards needed the most. It helped to calm the acute confrontation between Masa-Yards and the subcontractors long enough for the weak company to navigate through its first critical years in operation. From the subcontractor perspective, however, the solution was not anywhere close to ideal. This policy resulted in public concern over the protection of small enterprises and a judicial trial that lasted for years.804

Masa-Yards’ business mission was to make Finnish shipbuilding profitable by implementing radical changes. There was nothing new in this desire to change; every shipbuilding committee had tried to do the same since the late 1970s. In stark contrast to Wärtsilä Marine, its strategy stated that ‘Masa-Yards would not take unprofitable orders’.805 Saarikangas also declared promptly that Masa-Yards was not going to rely on the Soviet trade.806

Masa-Yards was profitable from the beginning: loss-making orders had been renegotiated, industrial strike action had almost disappeared, and the new organisation managed to control production, procurements and cost-accumulation.807 The new shipbuilding company was able to renegotiate reduced prices with subcontractors, as well as introduce a new, simpler

806 Navigator 11-12/1989.
807 Ristilehto, Liiketoimintashokki, 101.
organisation structure with hand-picked staff from among the old workers. As the next chapter will show, the state had become prepared to grant direct subsidies for ship projects. The bankruptcy united the shipyard manager, the important customer, and the shipyard workers against a common threat. For a short period of time the Helsinki and Turku shipyards, traditionally famous for troubled industrial relations and frequent strikes, became prime examples of collaboration and flexible negotiations. Eventually the bankruptcy estate was able to pay 57.7% of non-privileged debts.

Looking back, Saarikangas among other shipbuilders have presented opinions that Wärtsilä Marine’s bankruptcy was an unnecessary tragedy: unprofessional political decision-makers had lost their trust and filed bankruptcy for a solvent company. On the other hand, the bankruptcy erased several organisational and mental rigidities that had delayed structural transformations. On the whole, the bankruptcy constituted a momentous event in the restructuration of the Finnish shipbuilding system. The alliances, decision, and practices created in haste ushered a new era in the system structure and style as well as in the state-industry relationship. The sense of an emergency made old structures malleable.

The most radical difference between the old and the new system was mental rather than concrete. The discontinuities in terms of individual persons, material production, or organisations remained eventually quite subtle. Those individuals who stood up as the builders of the new shipbuilding system, had developed their competence in the old Cold War shipbuilding system. The state of turmoil provided certain individuals such as Saarikangas a change to seize an opportunity and to occupy a position as a central system builder in the post-bankruptcy shipbuilding system.

6.7. The Internationalisation of shipbuilding, 1992

The Masa-Yards annual report in 1990 underlined the consensus culture that had characterised shipyard operations at the beginning of the company: ‘[T]raditionally the Finns have been unified by war and envy, and to this list we can also add a major bankruptcy.’ As all the court cases, public battles, and claims for damages demonstrated, Wärtsilä Marine’s

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810 PM WMkp on non-privileged debtors 27.11.2013, WMkp.
bankruptcy did not unite all the Finns but rather generated mistrust between the state and entrepreneurs, the state and shipyards, and controversy between shipbuilders on the south coast and on the west coast.

The turbulence around Wärtsilä Marine in the latter part of 1989 overshadowed what was happening elsewhere in the Finnish shipbuilding industry. In August 1989, Rauma-Repola incorporated its shipbuilding units into a subsidiary ‘Rauma-yards’ and decided to close their Savonlinna shipyard by Lake Saimaa. The closure of the Uusikaupunki shipyard was also on the agenda, but as the shipyard managed to get some new profitable contracts, the closure was delayed. Mikko Uola argues in his history of Rauma-Repola’s shipbuilding that at that time, shipbuilding was already such a small share of the conglomerate that its directors were able to consider the future of shipbuilding calmly and rationally.\textsuperscript{813} From the point of view of the industrial reorganisation, cold and emotionless is not how the relationship between the west coast and south coast shipbuilders appeared. The discussion, which one could also call a battle, over the reorganisation of the Finnish shipbuilding system went on after the wreckage of Wärtsilä Marine.

In November 1989, the \textit{Financial Times} cited unspecified government sources and announced that the original idea behind the founding of Masa-Yards was to initiate a merger between Rauma-Repola and Hollming.\textsuperscript{814} It is possible that some ministers wanted to reorganise the Finnish shipyards into a single company. However, it appeared improbable that Saarikangas was planning merging his company, which he had founded with a considerable amount of effort and discomfort, with Rauma-Repola. The controversy between Rauma-Repola and Masa-Yards at the creditors’ meeting in December 1989 was noticeable. Rauma-Repola allied with Hollming and the Finnish Board of Export Guarantees against Masa-Yards, trying to buy Wärtsilä Marine’s Turku shipyard with its unfinished ships from Wärtsilä Marine’s bankruptcy estate sale. This plan would have split Masa-Yards in two. The ‘Yhtyneet Telakat,’ (\textit{United Shipyards}) alliance failed to win the case as Masa-Yards supporters had the majority in the creditors’ meeting, but the alliance forced Saarikangas to increase his offer by FIM 50 million.\textsuperscript{815}

Minister Ilkka Suominen advocated in public for the merger of all Finnish shipyards but noted that state could only facilitate reorganisation, not dictate to private companies. The main rationale for a single united Finnish shipbuilding company, he articulated in public, was that

\textsuperscript{813} Uola, \textit{Meidän isä on töissä telakalla}, 1996, 522.

\textsuperscript{814} \textit{Financial Times} 2.11.1989.

cooperation would facilitate capacity adjustments. As Wärtsilä Marine had demonstrated, it was easier for a large company to close some of its shipyards, compared to a situation in which rival companies should negotiate on closures. The global overcapacity in shipbuilding was a well-known problem, but the state’s interest in closing Finnish shipyards needs more analysis. Running down some of the Finnish newbuilding yards would temporarily alleviate competition for some special-purpose vessels but it could hardly solve the problem of the global overcapacity. It would, however, decrease the need for state support for shipbuilding in Finland.

For the last time, the possibility of a single, state-supported Finnish shipbuilding company was raised onto the government’s agenda in the second half of the 1990s. The SYP bank, which had become an involuntary owner of Masa-Yards after the bankruptcy, was looking for a buyer for its shares. In the end of the year, it had two options, which would each have a dramatic impact on the Finnish shipbuilding restructuring process. The first option was domestic acquisition. Rauma yards would buy shares from SYP and major Finnish shipbuilding companies—Rauma yards, Hollming, and Masa-Yards—would be organised under the management of Rauma-Repola’s director Tauno Matomäki. The second option was internationalisation. The Norwegian company Kvaerner had expressed an interest in investing in Finnish shipyards and buying the SYP shares as well as those of EFF-John, another Masa-Yards owner, to gain a majority in the company.

The Ministerial Committee on Economic Policy discussed the two options in October 1990 and again in January 1991. Again, the state became the final decision-maker in the industrial reorganisation because foreign acquisitions required authorisation from the government. Formally, the decision was about Finnish economic policy and international relations. If the government decided to refuse the Norwegian offer, the ministerial committee pondered, the direct negative consequences would remain mild. As the ministers presumed, it would not provoke Norway to a full-scale trade war, only slow down some processes. However, state intervention to block Norwegian investment in Finland would cause serious damage to the Finnish international image as a country that was on its way to a liberal, open, deregulated economy: how would it look to reject a foreign investment while negotiating participation in the European Economic Area?

There were also domestic points of view to consider. The domestic merger plan involved a state investment of new venture capital. It would cost another FIM 400 million from the public sector, and bind the state to shipbuilding for an unpredictable period of time. According to Ranki’s notes, the new Minister of Finance Martti Louekoski had also brought up political

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816 “Ministeri Suominen karsastaa telakoiden pakkoavioliittoa” HS 9.1.1990.
difficulties if the state bought shares from SYP at a price that would enable the commercial bank to profit from its investment in shipbuilding while the public sector took responsibility for the negative side effects. If Kvaerner’s ownership was to be accepted, the state would immediately be free of the shipbuilding and even gain a moderate interest rate for its investment in Masa-Yards.818

Eventually, the international option beat the national one. For the first time in Finnish business history, the government supported the selling of a majority of a strategically important export industry abroad. Even if the ‘logic on the whole supported selling’ Masa-Yards to Norway, the decision was not easy for the ministers, who claimed their ‘hearts were in the domestic solution’.819

The reorganisation of the Finnish shipbuilding had yet another act to get through before the basic structure of the Cold War shipbuilding system, dominated by the coordination within the four major shipbuilding company, had experienced a thorough reorganisation.

There had been increasing signs of rapprochement and an alliance against Masa-Yards between the west coast shipbuilders Rauma Yards and Hollming. In the autumn of 1991, they had participated in the competition for the contract of the Finnish Maritime Administration’s new multipurpose icebreaker under the name ‘Länsitelakat’ (*West shipyards*). That the shipyards with no previous experience in building large icebreakers eventually beat the Helsinki shipyard, which had specialised in icebreakers for decades, was a great surprise. It provoked claims that the state had given an unfair advantage for west coast shipbuilders for reasons to do with labour and industrial politics. In November 1991, the two west coast shipbuilding companies published their plan to merge.820

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Late 1980s, the Finnish Maritime Administration launched a project to replace the old Tarmo-class (1963) icebreakers. During the design process, the conventional Baltic icebreaker transformed into a novel multipurpose vessels that could be leased out for Arctic operations in the summers. This is an early draft of the ‘Tarmo 2’ project, designed by a Finnish engineering company to accommodate requirements of the Norwegian offshore company Ugland, which eventually became the first private contractor for the Finnish multipurpose icebreakers that were built by Finnyards in Rauma. Arctica Shipping archive, ILS report ‘Tarmo 2-luokan jäämurtaja Supply-versio” 9.1.1991.

The Maritime Administration signed the contract for a multipurpose icebreaker with the West shipyards on 22nd October 1991.821 On November 7th, 1991, the Finnish government made a decision of principle to facilitate the merger on the same day that the plan was officially published. The government’s decision text and the minister in charge, Kauko Juhantalo, underlined that this time, there was a limit to the state’s liabilities and that its support was a one-off contribution.

In November 1991, the shipbuilding company was named Finnyards. Rauma oy, the successor company of Rauma-Repola822, was the biggest owner with a 47.9% share, Hollming owning 39.1%, and the state 13%. According to the shareholders' agreement, Finnyards pledged to buy back the state's shares in three to five years if it had the required assets at. Finnyard appointed Aarno Mannonen, Hollming’s old director as its CEO.823

What was different when Rauma-Repola’s and Hollming’s merged in 1991, in comparison with the situation in 1986 when Wärtsilä and Valmet had consolidated their shipbuilding operations? According to Helsingin Sanomat, the majority of the company’s equity of FIM 384 million was, as in Wärtsilä Marine’s case, a non-cash contribution and mostly comprised

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822 Rauma-Repola and a forest industry company Yhtyneet paperitehtaat merged into a Repola Oy in 1991. Rauma Oy was Repola's subsidiary of metal and machinery industry production. HS 7.3.1990.
823 Uola, Meidän isä on töissä telakalla, 1996, 524.
shipbuilding facilities and machinery.824 A crucial difference was that the state agreed to become a shareholder in shipbuilding from the beginning. The contract for the state’s multipurpose icebreaker, with the published price of FIM 368 million, almost equalled the company’s equity. In public, it was taken as a sign of state support of the reorganisation.825 In the spring of 1992, the government proposed to Parliament that the state would guarantee Finnyards’ domestic and foreign loans of FIM 26 million without collateral.826 Parliament approved the proposal without debate.827

Only a minor epilogue is left of the reorganisation of the Finnish shipbuilding industry before we reach the chronological border of this study. In August 1991, in conjunction with the reorganisation of Rauma yard’s shipbuilding reorganisation, the company decided to close the Uusikaupunki shipyard. This closure prompted no large-scale state intervention, but it provoked questions in the Parliament. A group of social democrat members of parliament inquired why the government did not appropriate shipbuilding subsidies to Uusikaupunki shipyard rather than paying unemployment benefits. In addition, they proposed that the state should ‘make a positive effect on the reactivation of the Finnish-Soviet trade through striving for new credits, trade exchange, and financing arrangements.828

This proposal of translating social security expenses into shipyard subsidies and increasing Soviet trade had been a powerful argument in shipbuilding policy during most of the Cold War. In his answer in 1991, the Minister of Trade and Industry Kauko Juhantalo refused to introduce any new state measures to save Uusikaupunki shipyard on the grounds that state could not intervene in the internal decision-making of private companies and that the Finnish shipbuilding policy could only influence the general operational environment and not give a certain shipyard special treatment. Regarding the problems in the Finnish-Soviet trade, they ‘were primary Soviet domestic problems which were not under the Finnish government’s power to solve’.829

In 1991, the Finnish economy had gone into a deep recession. The government had to prioritise its spending in a restricted framework. In 1991, none of the smaller shipyards had any political gravity left with which to attract state aid in difficulties. Only a few large industrial units that

829 "Vaikeudet ovat ensisijaisesti neuvostoliitolaisten osapuolen sisäisiä ongelmia, joiden ratkaiseminen ei ole Suomen hallituksen vallassa." Written question and reply 104, 1991 vp.
might be internationally competitive could still claim special treatment. The reference to the Soviet trade was like a fresh breath of wind from the 1970s, but the response showed that it was no longer a political priority in the Finnish trade and industrial policy.

Because of the local importance of Uusikaupunki shipyard, the city of Uusikaupunki bought the shipyard from Rauma Oy. In 1993, the shipyard went bankrupt without provoking a nationwide public outcry.830

6.8. Conclusions: Crisis as impetus for change

This chapter examined the reconstruction of the Finnish shipbuilding industry at the end of the Cold War period of 1977 to 1993. At the beginning of the period, the Finnish Cold War shipbuilding system was at a stable, mature stage and the four big Finnish-owned companies kept their competition under the system control. At the end of the period, a Finnish shipbuilding system no longer existed, and half of the capacity had a foreign owner. Through scrutinising the controversies, complexities, and conflicts in numerous negotiation rounds during this fifteen-year reorganisation process, this became the longest of the five case studies. The negotiations throughout the period had two overarching themes: competitive and cooperative relationships between the Finnish shipyards, and the coordinating and conflicted relationship between the state and the industry.

During the first period of Finnish Cold War shipbuilding, industrial expansion was a priority for both the shipbuilding industry and the government. Since the Finnish Cold War shipbuilding system reached the stage of maturity in the 1970s, the coordinated competition between the big shipbuilders ensured that the Soviet trade was enough to provide more than a meagre income. In temporary downturns, the state actors were ready to assist the shipyards with as a part of employment policy.

From the late 1970s onwards, the growing instability of international shipbuilding destroyed the preconditions for stability and profitability. Unlike in the 1970s, the state was no longer willing to translate social security benefits into shipbuilding aid. Instead, the governments were willing to support industrial reorganisation. In a way, the shipbuilding reorganisation during the long 1980s illustrated how the principles of competitive capitalism overcame the traditional model of cooperative capitalism. The general trend toward economic liberalisation made the public opinion and the Finnish government open to the plan to decrease state involvement in business.

The government’s decisions not to bail out the big important employer in 1989 or to allow foreign acquisition in 1991 were difficult and much debated, not self-evident. Ministers tried

to balance unemployment and rationalisation, structural change and minimising costs, and patriotism and internationalisation. In fact, the state involvement in shipbuilding initially increased.

Scholars of Finnish economic policy have suggested that industrial competitiveness appeared in Finland as a national project. The business and political elite, while advocating international competition, still nurtured the idea of a consensus of common national interests. In the new era, the shipbuilding industry still had technopolitical momentum in state-level decision-making as a contributor to national welfare. Instead of the number of industrial vacancies, however, the political weight was now estimated based on international competitiveness.

The number of major Finnish shipbuilding companies decreased from five to two. The direct reason for the closures was global overcapacity in shipbuilding. It is important to note, however, that no company closes its production units because of global overcapacity, but because of their inability to succeed in global competition. At the beginning of the shipbuilding reorganisation process in the mid-1980s, the main decision-makers were directors of shipbuilding conglomerates who tried to adjust the Finnish shipbuilding industry to the decreasing scale of the Finnish-Soviet trade and increasing competition in the western trade. At the end of the process in the late 1980s and the early 1990s, the state tried to optimise the number of the Finnish shipyards from the points of view of employment, security of supply, and required public aid for shipbuilding. The gravity of decision-making power moved from the industrial negotiations to the government cabinets.

No one could say that the shipyard crisis arrived in Finland unannounced. The capacity to change was always triggered by crisis—whether real or imagined. Shipbuilding industry also learned to use crisis as a communication strategy to create urgency in state-level decision making. The bankruptcy of such a big company constituted the ultimate risk which was eventually realised. From the Finnish shipbuilding system’s point of view, the crisis was a critical problem but it was also used as a tool to negotiate the state’s role in future shipbuilding.


In capitalist countries, competition should take place between companies and be primarily based on the price and quality of the product without unnecessary disturbance of state interventions. This is what all of the individuals, parties, and special interest groups who advocated market economy over socialist planning in the Cold War approved in principle. The priority of the markets constituted the very core of all the myriad versions of capitalism. The global shipbuilding business, at least when it came to interchangeable and globally mobile and standardised merchant tonnage, provided conditions for ideal price competition.

The global shipbuilding was far away from having perfect markets, however. During the Cold War, state-funded financing schemes, subsidised export credits, or direct state aid for shipyards became established procedures in the shipbuilding competition. Export financing instruments were crucial elements in any shipbuilding country, and state aid schemes occupied ever stronger positions in shipbuilding policies after the oil crisis. This tension between the principles and practices of international ship trade also framed the Finnish discussion on state aid and financing in the later Cold War when the Finnish Cold War shipbuilding system disintegrated, and Finland integrated with the European Union. This chapter concentrates on the state actors, politicians, diplomats, and civil servants, and their interaction with the shipbuilding industry, as they participated in formulating the Finnish shipbuilding policy.

The section contributes to the first research objective by examining the institutions through which the Finnish Cold War techno-economic shipbuilding system received financial or relative support from the public sector. As the previous chapters have already presented, the Finnish Cold War ship financing system differed from its Western European competitors because the bilateral clearing trade provided front-heavy cash flows for ship projects, and also the possibility for state organisations to support the trade exchange without having to grant direct shipyard subsidies. As a result, the mature Finnish shipbuilding system was able to announce that it was free from state subsidies. Indeed, the state and the industry were united in their opposition to shipbuilding subsidies.

The Finnish Cold War shipbuilding system did, in fact, have fewer explicit and permanent state aid schemes than most of its European competitors. However, through the variety and number of implicit and temporary state aid arrangements, the state financing institutions had a crucial impact on the development of Finnish shipbuilding in the period that bridged the Cold War and the post-Cold War eras.
Chapter 5 discussed the important role of the bilateral clearing trade which was a constitutive part of the Finnish-Soviet relationship during the Cold War. Similarly to the clearing trade and payment system, the Finnish shipbuilding financing policy also had two sides. The Finnish political and administrative actors employed finance-related instruments as tools of domestic industrial policy, as well as in foreign affairs and foreign trade policy. This chapter’s response to the second research objective on the state-industry relationship continues the previous chapter’s analysis of the state’s responsibility to industrial competitiveness in the era of globalisation. European integration and industrial internationalisation together compelled the state government to reconsider the technopolitical function of domestic shipbuilding in the post-Cold War era.

Finally, the chapter responds to the third research question by elaborating the formation and reformation of the Finnish ship-financing instruments during the period from the OPEC-shock in the mid-1970s to Finnish EU membership. At the downfall of the Soviet trade, these ramifications of the Finnish shipbuilding policy formed the foundation for the post-Cold War shipbuilding policy. From this angle, the dissolution of the Cold War system became apparent when environmental jolts re-politicised certain instruments of state support that had been established as ordinary parts of the Finnish Cold War shipbuilding. This forced the state actors to re-evaluate the value of domestic and western trade that had been subordinated to the Soviet ship trade during the Cold War.

When Finland introduced direct state subsidies to shipyards according to the EU shipbuilding directives in 1996, it could no longer claim it had no permanent state aid schemes for shipbuilding. The Finnish shipbuilding system had now abandoned the unique features that once made it distinctive in European comparisons. The Finnish national style in shipbuilding had come to its end.


When the Finnish shipbuilding industry and government stated that the Finnish shipbuilding was free from state subsidies, they meant that there was no permanent scheme for direct shipyard state aid to shipyards, and no subsidised export credits that would regularly exceed the standard level agreed within the OECD. The direct state shipbuilding aid, arrangements in which the public sector unconditionally covered part of the production costs to enable a shipyard to sell a ship at a lower price, posed the most striking conflict between the principles and practices of market competition. On the other hand, he OECD terms on export credits, a maximum eight-year payback time for 80% of contract price with an 8% minimum interest rate, were significant because they were almost the only limit that the western European shipbuilding countries had agreed on. Although not a binding rule, few countries wanted to risk their reputation by breaking the consensus.
In the mature stage of the Finnish Cold War shipbuilding system, the pre-delivery financing available in the bilateral Soviet trade kept shipyards running almost without any external financing during the construction period, and the relatively high prices for special purpose vessels in the Soviet trade were enough to cover production costs without state subsidies. Yet the alleged independence of the Finnish shipbuilding industry from the state was an inaccurate claim, if not a misleading one. Besides state aid and export credits, there were several other ways for a country to support its own industry. The OECD listed seven main categories of public subsidies: the protection of national markets through custom duties, import restrictions and government purchasing, direct subsidies or fiscal assistance for shipyards, support for R&D activities and restructuring, general facilities for financing shipyards on favourable terms such as public guarantees for loans, and assistance for domestic ship purchases.832 The Finnish shipyard financing policy was peculiar and often unrecognised within the OECD framework but it did exist.

Most of this chapter addresses the Finnish shipbuilding policy with regards to state aid and export credits. Before proceeding to this discussion, we need to analyse cost guarantees. Chapter 2 described the origin and rationale of export compensations in the 1950s and cost guarantees from the beginning of the 1960s onwards. Their emergence was directly related to the transformation of Finland from a low-cost agrarian country into a high-cost industrialised country that resulted in a difficult inflation-devaluation cycle in the Finnish economy. The possibility of receiving public reimbursements to offset the increasing production costs during the construction period was of utmost importance for the economics of the Cold War shipbuilding system. The cost guarantees smoothed away some of the negative economic impact of economic growth when increases in wages and profitability were not synchronous. They also made it easier for corporations to participate in labour market negotiations. From the system perspective, the cost guarantees constituted a key component that lubricated the co-development of welfare state, shipbuilding industry, and Finnish-Soviet trade.

The cost guarantee system was based on the same export credit guarantee law of 1962 as the other Finnish state guarantee arrangements that were available to Finnish export companies. Those included credit risk guarantees (Luottoriskitakuu, L-takuu) and finance guarantees (Rahoitustakuu, R-takuu), which were considered a normal part of institutional state support for commerce in market economies.833 Whether the cost guarantee system was a form of state subsidy or just a normal part of financial infrastructure is a complex question, and the answer

833 Credit risk guarantees were needed especially when exporting to developing countries. They were insurance-like guarantees for the company if the buyer did not pay back their debt. Finance guarantees were provided especially for small companies which had not sufficient assets to use as guarantees to get export credits. Herranen, Valtion raha vauhditti, 2009, 80-90.
to it changed over time. A central difference between a state guarantee and a state subsidy was that subsidies were proportionally profitable for the companies. They might shift a considerable share of normal business risk from the private to public sector and result in business affairs that would otherwise be unfeasible.

Like the other guarantee-products, the cost guarantee system was supposed to be a self-supporting mechanism for risk sharing in occasions when risks were unacceptably high or unpredictable for private companies. For example, in 1967 the cost guarantee system compensated the Finnish shipyards for the part of cost-increases that exceeded 6% in a year.\(^{834}\) The OECD had examined the Finnish cost guarantee system at the turn of the 1970s and recognised it as a mechanism that nationalised a great deal of business risks to the public sector. However, the OECD inspectors concluded that it was not an unfair shipbuilding subsidy as it was also available for other industries—paper machines, in the Finnish case.

Protection against inflation became an even more important asset over the course of 1970s. The collapse of the Bretton Woods system of fixed exchange rates increased the fluctuation of currency exchange rates.\(^{835}\) In 1972, the Finnish Board of Export Guarantees paid compensations to the industry for the amount that exceeded the aggregated fees that the companies had paid for the guarantees. After the oil crisis, the inflation rate skyrocketed, following energy prices. The public disbursement for the shipbuilding industry multiplied at a high speed.\(^{836}\)

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\(^{834}\) PM Vientitakuulaitos on reform of the cost guarantee system 2.12.1976, MTA.

\(^{835}\) When the US abandoned the direct convertibility of the US dollar to gold that had constituted a foundational component of international financial exchange, the Bank of Finland opted for pegging Finnish Markka to a bundle of currencies with a composition that reflected the relative importance of Finland’s foreign trade partners. Heikki Oksanen, “Euro ja Suomi politiikan ja talousoppien valossa”, Kansantaloudellinen aikakauskirja 113:2 (2017), 184-185. Kuusterä & Tarkka, Suomen Pankki 200 vuotta II. Parlamentin pankki, 2012, 393-403.

The shipbuilding directors resolutely defended the cost compensations against demands that such compensations for cost increase should be paid for by the working-class people instead of big corporation. Tankmar Horn articulated in the 1975 Wärtsilä personnel magazine that the Finnish shipyard industry did not need state aid but rather competitive export credits and moderate inflation. According to Horn, the unexpected hike in raw materials and wages was ‘Finland’s national speciality’, for which foreign customers were not ready to pay premium prices.  

If the state was unable to provide these conditions, it was only fair to receive compensation.

As the previous chapter has demonstrated, the domestic shipbuilding debate in the mature system circled around industrial employment as a key to national welfare, to the extent that the political gravity of an industry was commensurate with the jobs it created. The number of industrial vacancies being a national priority, it made sense to draw a parallel between business subsidy and unemployment compensation. Horn admitted to Helsingin Sanomat that the cost guarantee disbursements had been high in 1976. However, as he underlined, they were still cheaper the social security benefits for over 10 000 people who worked at Wärtsilä’s shipyards.

Horn’s argument, implying that only cost guarantees kept these people

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837 Interview of Tankmar Horn in Wärtsilä personnel magazine 2/75; Interview of Christian Landtman in Wärtsilä personnel magazine 1/73.
838 HS 3.11.1976
employed, had apparent faults, but it captured the tone of the mature shipbuilding system in all state aid discussion. In order to find sympathy in governmental cabinets, the directors had to show that the industry’s welfare translated directly into national welfare.

The advantages of the cost compensation system for Finnish shipbuilding relied on a number of factors: the fees the companies had to pay to get guarantees, the time of delivery, the share of the contract price that was valid for reimbursement, the index series that determined the cost increase, the realised cost increase as experienced by the company, the company’s ability to include the predicted inflation in contract prices, and the companies’ chances to cash in on currency rate fluctuation and devaluations. All these variables were subject to changes and almost all changes in the terms required governmental approval. This made the real effects of the cost guarantee system difficult to estimate and the system itself rigid in adapting to environmental changes.839

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Picture 18: One reason for the complexity of cost guarantee discussion was that the reimbursements depended on several variables. This equation is an example that the Cost guarantee committee used to illustrate cost guarantees in 1976. The exemplary contract price is 1000 of which the guarantees cover 75%. A represents the cost increase index, B, C, and D represents the mean value of cost increase during the quarter, 150, 250, and 350 represent the cost accumulation during the last three quarters of the project turnout time. Cost Guarantee Committee report 1976, 6.

After the first OPEC-shock in oil prices, the cost guarantee system was no longer a self-funding risk-sharing apparatus. Instead, the critical public received it as an increasingly expensive mechanism that nationalised business risk and allocated public money through the state budget to support private business. The reason for the sudden politicisation of the cost guarantee arrangement was not the change in the terms of the guarantees. The external change in the environment transformed the previously accepted state guarantee into a controversial state subsidy; it sparked up a debate over the state role in maintaining a competitive business environment.

In 1975, the Finnish government embarked on the reformation of the cost guarantee system in the face of the public criticism and adjusted the old cost guarantee system to the more

839 For instance, originally the cost increase was based on an outdated special series of the Finnish whole share price index, that was replaced by Manufacturing industry index in 1971, that was changed to a special series of production price index in 1972. Cost Guarantee Committee report 1976, 17.
turbulent economic environment. The first result of the public outcry was that the government refused to make new industrial branches eligible for cost guarantees in 1975. Ships and paper-machines preserved their privileged status as the only kind of export products eligible for cost-compensations.840

A quick fix was to quadruple the fees that export companies paid for the protection. Due to the low starting point, even four times higher fees were not enough to stop reimbursements accumulating faster than returns. The government appointed a dedicated working group, the Cost-Guarantee Committee of 1975, chaired by Klaus Waris. Waris was a respected Professor Emeritus in economics, and as described in Chapter 2, a former director of the Bank of Finland who had been active in export financing discussions in the 1950s.841 The task of the committee was to investigate the cost guarantee system and determine necessary adjustments.842

The committee returned its report next year 1976. The report expressed strong support for the continuation of the cost guarantees, backed by historical experience. According to the committee report, cost guarantees had a critical function in enabling long-term trade exchange with the Soviet Union ‘especially for the heavy engineering industry expanded by the war reparation deliveries’.843 A quarter-century had passed since that post-war insecurity. Nevertheless, with this reference to war reparations, the committee added weight to its argumentation. It implied that the state had a moral responsibility to support the shipyards that had expanded their capacity for national security reasons.

The committee report also justified inflation compensations with nation-wide socio-economic problems that had forced the shipyards to raise wages to patch up leakages in the Finnish welfare project—to persuade skilled workforce not to move to Sweden.844 Disregarding the fact that in 1975 to 1976, Finland had suffered from unemployment rather than labour shortage, this argument too underlined the overall conclusion that the Finnish shipbuilding industry

840 With the exemption of the export of big, individualised paper machines that were paralleled with ships. In particular, from the 1970s when the Finnish construction project export increased, the construction companies tried to extend the cost guarantee system to cover their business as well. PM KTM, Rytikönen, on cost guarantees for Finnish construction companies building in the Soviet Union, notes from governmental discussion (Hallituksen iltakoulu) 6.8.1975, MTA.

841 The majority of the other members of the committee consisted of civil servants from the Ministry of Trade and Industry, other ministries and the Bank of Finland. The committee had no industrial representation.

842 Government proposal for the parliament. HE Eduskunnalle vientitakuulain (479/62) muuttamisesta. VP 1979; PM KTM, Kurki, on the Cost Guarantee Committee 3.2.1975, MTA; PM vientitakuulaitos 2.12.1976, MTA.


844 Cost Guarantee Committee report 1976, 25.
was a responsible employer in a difficult situation, not a risky gambler playing with public money.

![Graph: The inflation (%) and cost compensations paid (m. FIM), 1972–78](image)

**Figure 34:** The oil crisis inflated production costs and led to a hike in the amount of compensations paid to the Finnish industry based on the cost guarantee system. 1978 based on estimation by Shipyard committee 1977. Data: *Shipyard committee report* 1977, 19.

The Cost Guarantee Committee recognised the risk that publicly-funded risk-sharing mechanisms could encourage risky behaviours and unfeasible business ventures. However, the Committee ended up with a statement that this was not the case with Finnish cost guarantees.845

Opinions on the cost guarantee system ranged from one extreme to another. The Finnish shipyards and shipping companies demanded that the cost guarantee system be extended to domestic orders as well. The Ministry of Trade and Industry wanted to maintain the terms of cost guarantee as they were. Ministry of Finance strongly advocated in favour of stricter conditions for compensations.846 The umbrella organisation for the Finnish metal manufacturing industries addressed the criticism plainly in its account to the committee: ‘Already the idea that a serious entrepreneur would make investments on the basis of expectations of continuous inflation is unrealistic.’847

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847 ”Jo pelkkä ajatuskin siitä, että vakava yrittäjä perustaisi investointinsa jatkuvan inflaation odotukseen, on epärealistinen. The federation of Finnish metal industries (Suomen Metalistleollisuuden Keskusliitto) statement to Ministry of Trade and Industry on Cost guarantees 1976, MTA.
Figure 35: Estimated percentage of cost compensations of the contract prices. Comparisons of different terms of cost guarantee system when the rate of the cost growth is fixed 15% and project length 18, 36 or 60 months. The numbers of 1972 and 1974 as realised, the two versions of 1976 according to the two scenarios studied by the Cost Guarantee Committee: According to the propositions, only cost growth exceeding 5% or 10% would be compensated. Data: Cost Guarantee Committee report, 1976, liite 2.

The Finnish shipbuilding directors continued their campaign to keep cost guarantees at an advantageous level. For instance, Wärtsilä’s directorate employed their defeat in the competition for USCG icebreakers in 1976 to support cost guarantees by blaming the high inflation. As Horn articulated in Helsingin Sanomat, ‘Wärtsilä would hardly have lost the competition if the 1972 terms of cost guarantees were still valid. Because of things like this, the sad outcome is that Wärtsilä has not a single new building contract since 1976’.848 The Shipyard Committee of 1977, that was discussed in Chapter 6, took a firm stand in defence of the cost guarantee system. In publicity, spokespersons for the shipbuilding system did not miss any opportunity to highlight the connection between cost guarantees, new contracts, and employment and thereby suggest that the cost guarantee system should be of common interest.849

849 Christian Landtman in Wärtsilä personnel magazine 5/77; Tankmar Horn in Wärtsilä personnel magazine 6/77;
Advised by the Cost guarantee Committee and other experts, the government ended up concluding that the cost guarantee system, as a public mechanism to share risks of unpredictable inflation, was compatible with market capitalism. However, the way the guarantees compensated normal business risks for only a few industrial branches was not. The cost guarantee system was changed according to the committee’s recommendation into a more flexible policy instrument. In the late 1970s, the government could adjust the terms of cost guarantees as its own decision without having to consult the parliament or amend the law. The fees were increased to raise revenues. For projects shorter than 36 months, the renewed cost guarantee system became less advantageous.850

The key instrument for system adjustments was enabling the government to flexibly and without unnecessary delays adjust the share of the cost increase companies had to cover. At the beginning of 1980, companies could receive compensation only for the cost increase that exceeded 9%. Industrial interest groups complained that insufficient protection against the cost-increase would decrease exports and degrade the position of the Finnish shipyards in competition against foreign countries where inflation was lower. In 1982, the excess the shipyards had to cover themselves was 7%. In 1986, The Finnish Board of Export Guarantees proposed enhancing the terms so that the cost-increase of over 4% would be compensated in order to support the Finnish shipbuilding industry during the recession, but the Finnish government kept the limit at 7%.851

In the first half of the 1980s, the cost guarantee system lost its momentum. As a result of skyrocketing costs after the oil crisis, the mundane kind of state-guarantee arrangement became politicised, more unpopular, and less profitable. Shipyards applied for cost guarantees for the last time in 1986. In 1988, the system was already dismantled.852 The final dismantling took place not as a dramatic decision after a public quarrel but gradually through incremental adjustments.

7.2. Disparity between domestic and foreign trade financing, 1976

The expansion of the Finnish Cold War shipbuilding system had been primarily fuelled by foreign instead of domestic demand. The state aid and financing institutions had developed alongside the export orientation. The state supported the domestic shipping industry through taxation and indirectly through rewards for high ice classification, but these instruments were not strictly conditional on buying Finnish-built ships. Even state-owned companies were not required to buy Finnish ships.853 Between 1966 and 1976, less than 15% of the Finnish-built

853 The state oil refinery Neste became the biggest shipping company in Finland in the 1980s. Its fleet
ships remained in Finland. Domestic orders had only tertiary importance after the Soviet orders, which were crucial for profits and political relations, and western orders, which proved that the Finnish shipbuilding was not depended only on the Soviet orders.

Figure 36: The share of Western, domestic, and Eastern markets of the Finnish ship production (GT completed) 1975-1996. Data: SM Database for Ships built in Finland.

In December 1976, the Ministry of Trade and Industry appointed a Ship Working Group to examine what could be done to direct orders of domestic shipping companies to domestic shipyards. In its obscurity, the passive voice of the assignment was the most accurate formulation possible for the Ministry. The state could not dictate that private companies buy domestically. They could only, in cooperation with other organisations, try to create the conditions and atmosphere in which Finnish ship owners would prefer Finnish shipyards.


855 Laivaryhmän mietintö. Kauppa- ja teollisuusministeriö 1977, Kauppa- ja teollisuusministeriön työryhmä ja toimikuntaraportteja, Ucc:12, NA (Ship working group report. Ministry of Trade and Industry,
From the system point of view, state made itself an intermediator between the Finnish shipbuilding system and the shipping industry.

The trigger for the sudden interest in the domestic ship trade was that the international ship market had turned to a steep downward slope after the first oil crisis had crushed demand for tankers. As the previous chapter pointed out, Finnish future expectations at this initial phase of shipyard crisis were actually quite positive in international comparisons. Instead of total destruction, the prospect of crisis meant downscaling back to the level of 1970: ‘In the light of present-day development it is probable that shipyards won’t get enough new orders to employ the full capacity [...] Thus, the near future of the shipyard industry looks disconcerting.’

Instead of a full-scale crisis, this discourse merely shows how well-accustomed the Finns were to the stability of the mature shipbuilding system when even weak signals of fluctuation triggered demands for a policy change.

The committee chair was Pentti Viita, the same civil servant as in the previously examined Shipyard Committees. Of the committee members, Tapio Forsgren represented the Finnish shipyard industry association STTY and Per Forsskåhl the Finnish Shipowners’ Association (Suomen varustamoyhdistys). Ship buyers and shipbuilders were not united in their interests. Shipyards needed profitable orders and ship buyers wanted inexpensive vessels. Finnish merchant shipping companies were used to buying the majority of their cargo vessels from Sweden, Spain, and West Germany, where they got quality ships with lower price, shorter delivery time, and better terms of financing than would be available in Finland.

At the present, the committee argued, the main problem was that the financing instruments available to Finnish ship buyers and ship owners both preferred international transactions to domestic trade. For export, the Finnish Export Credit Ltd provided credits based on the OECD convention on export financing. For domestic orders, a Finnish shipyard could get Domestic Supply Credit (Kotimaisen Rahoituksen Tuki, KTR-luotto, hereafter KTR credit) only after the delivery. While Export Credit Ltd was a company in which the state held a share majority, money for KTR credits came from the Bank of Finland and commercial banks.

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857 Ship working group report 1977, 9, 14.
858 Ship working group report 1977, 15.
859 In 1977, Bank of Finland covered 30% of the KTR credit, the bank of the shipyard provided 25% and the bank of the ship buyers 35%. Ship working group report 1977, 17-18.
Table 1: Comparisons of state financing schemes for domestic ship trade (Finnish shipyard selling a ship to a Finnish shipping company) and export trade (Finnish shipyard selling a ship to a foreign buyer). Data: Ship working group report 1977, 25; Shipyard Committee 1984 report, Appendix 1.

<table>
<thead>
<tr>
<th></th>
<th>KTR Financing schemes for domestic purchases</th>
<th>Export credits (OECD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Payments at the delivery</td>
<td>20%</td>
<td>20%–30%</td>
</tr>
<tr>
<td>Interest rate</td>
<td>Not fixed, in 1977: 9,25%</td>
<td>8%</td>
</tr>
<tr>
<td>Term</td>
<td>2–8 years</td>
<td>7 years (1977); 8,5 years (1984)</td>
</tr>
<tr>
<td>Credit fee</td>
<td>0,25%</td>
<td>NO</td>
</tr>
<tr>
<td>Stamp tax</td>
<td>0,90%</td>
<td>NO</td>
</tr>
<tr>
<td>Security deposit</td>
<td>Bank guarantee, mortgage, state guarantee</td>
<td>State export guarantee, mortgage</td>
</tr>
<tr>
<td>Cost guarantees</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>Guarantee fee</td>
<td>Buyer pays 1,5%/year</td>
<td>Seller pays 0,37%</td>
</tr>
</tbody>
</table>

The key difference between export credits and domestic supply credits, as Table 1 summarises, was that in domestic orders, the interest rate was not fixed and was generally higher, and cost guarantees were not available. The committee calculated that in 1977 a ship of equal price and technical qualities would cost 26% less for the Finnish ship buyers if it was imported from abroad in comparison to a domestic purchase. According to the committee report, the Finnish ship financing instruments for domestic contracts were not just worse. They were discriminating against Finnish shipyards in favour of foreign builders.860

One thing both shipbuilding and the shipping industries agreed on was that domestic trade should be equal to foreign trade. As they saw it, improvements to domestic financing instruments would not conflict with the policy on export-oriented economy growth in Finland but rather support it:

*In Finland, state support for export trade has been seen immensely justified [...] Export trade has meant revenues but part of them have to be used to buy ships from abroad. Domestic production substituting imports, from the point of view of balance of current accounts, should be as important as export production.*861

The Ship Working Group report had no imminent consequences. Besides the claim for equal terms of financing, the shipping and shipbuilding industry were opposed in their interests. The ship owners wanted to choose from the global market the ship that had the best price-quality ratio while the shipbuilders naturally sought for the highest possible compensation. At this point, Finnish shipping and shipbuilding being divided, the maritime cluster gained no remarkable bargaining power to muster political support for domestic ship purchases. As the previous chapter demonstrated, it was the bad prospects for shipyard employment, instead of the discrepancy between domestic and foreign trade financing instruments that in the following years drew attention to the maritime business and the state measures that focused on maximising shipyard employment instead of its domestic share. However, the Ship Committee work in 1976 created the foundation for a process during which certain domestic orders gained unprecedented political gravity.


After the first wave of the shipyard crisis in 1978, discussed in the previous chapter, ship owners and shipyards found a common ground in passenger ships and ferries. Eventually, this narrow niche functioned as a critical stepping stone to the new shipbuilding and shipping policy in Finland.

Passenger traffic across the Baltic Sea had traditionally had an important role in creating and maintaining economic and cultural connections between Nordic countries. From the 1960s onwards, migration from Finland to Sweden, technical development, as well as the introduction of onboard duty-free shopping, promoted public, commercial, and private interest in ferry lines. Faster and larger ro-ro vessels increased the amount of cargo these ferries could carry on their car decks. Even though the volume of the trade that was exported and imported in car ferries was modest, the value of this relatively small-sized mixed cargo was relatively significant for the Finnish economy.862

Figure 37 shows that the share of passenger ferries was considerable within the Finnish merchant tonnage. In absolute numbers, Finland’s passenger tonnage was roughly equal to Sweden and Denmark, but the low number of other cargo tonnage highlighted the relative importance of Finnish ferries.863 After the oil crisis, all freight rates plummeted, but the profitability of ferry lines less so. In the gloomy circumstances, the ferry lines provided at least some hope for Finnish shipping and valuable orders for shipbuilding.864

862 Kaukiainen, Ulos maailmaan! 2008,464.
864 The relative importance of passenger ships was emphasised because they were expensive investments and thus absorbed resources from other kinds of tonnage. Yrjö Kaukiainen has evaluated, that the Finlandia (1981) cost as much as three ro-ro vessels. Kaukiainen, Ulos maailmaan! 2008,464.
In 1978, the first shipyard committee proposed measures to support shipyards through the temporary difficulties.\textsuperscript{865} The previous chapter analysed the measures from the point of view of the state-industry relationship at the beginning of shipbuilding reorganisation, but they also need to be evaluated from the point of view of state financing policy.

In 1978, the government appropriated direct shipyard subsidies of FIM\textsuperscript{20} million.\textsuperscript{866} A test-case for the current emergency-funding policy was a ferry project that Finnish shipping company SF-line was planning to order from Japan. The rationale was a paradoxical combination of national competitiveness and uncompetitiveness. The contract was of paramount importance for Wärtsilä Turku shipyard, which had a relative competitive advantage in passenger ferries as well as strategic reasons to prevent a Japanese shipyard getting a considerable reference in the field. However, it was losing the competitive bidding due to high price. In his letter to the Ministry of Trade and Industry, Wärtsilä’s director Tankmar Horn drew the government’s attention to the difficult employment situation: ‘Our chances to get other contracts of this size are small. For that reason, we have offered for these ships at a loss. In spite of this, it seems our price is still too high’.\textsuperscript{867}

Indeed, the price difference between the Finnish and the Japanese projects was striking. Wärtsilä’s best offer was still FIM\textsuperscript{29} million higher than the Japanese shipyard’s. A local

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{structure_finnish_merchant_tonnage.png}
\caption{Structure of the Finnish merchant tonnage (volume). Data: Ojala (2010), 174.}
\end{figure}

\textsuperscript{865} PM KTM/Rekola 20.4.1978 on state subsidies for shipyards, EAB1 telakka-avustukset, KTM, NA.
\textsuperscript{866} PM KTM/Rekola 20.4.1978 on state subsidies for shipyards, EAB1 telakka-avustukset, KTM, NA.
\textsuperscript{867} ”Mahdollisuutemme saada muita tätä suuruusluokkaa olevia tilauksia, joilla olisi välitön työllisyysvaikutus, ovat pienet. Tästä syystä olemme tarjonneet näitä laivoja hinnalla, joka merkitsee suurta taloudellista tappiota telakalle. Tästä huolimatta näyttää todennäköiseltä, että tarjoushintamme on liian korkea.” Tankmar Horn to KTM 31.3.1978 on domestic ferry construction to secure employment at Turku shipyard, EAB1 telakka-avustukset, KTM, NA.
shipyard offered some other advantages for the Finnish shipping company, such as lower transaction and transportation costs and options for future ship development, but there was no way these advantages would be worth the price difference. As Minister Esko Rekola presented the topic for the Ministerial Finance Committee, the only way to get valuable orders to Finland was to grant a direct subsidy of 17 million to Wärtsilä Turku shipyard to offset 15% of the production costs. In March 1978, the government agreed to use 17 million of the total 20 million appropriated subsidy reserves to win the single passenger ship to Finland.\textsuperscript{868}

The state support for SF-Line inspired other shipping companies to ask for similar support for their new-build projects.\textsuperscript{869} In the aftermath of the 1977–1978 shipyard crisis, the government subsidies totalled FIM65 million. Of this sum, a small inland-water shipyard in Savonlinna received half a million and Rauma-Repola 2.5 million for a project of two cargo ships. The vast majority of this fund was assigned to for Wärtsilä’s passenger ships projects that were expected to provide over 10 000 man-years of work.\textsuperscript{870} In the late 1970s, employment of blue-collar workers was still a valid argument for the shipping and shipbuilding directors to invoke to gain political good-will. Correspondence between companies and the Ministry of Trade and Industry contained careful estimations of the number of shipyard worker man-years the projects would provide. Engineers and other white-collar workers were usually not included in the numbers.\textsuperscript{871}

While international competitiveness gradually overtook full employment as the leading doctrine in the national consensus, companies adapted their argumentation respectively. ‘Against whom are we Finns in competition?’ asked the director of the Finnish Shipowners’ Association (Suomen varustamoyhdistys) Harry Österberg in November 1979. The question was presented in a seminar held by the maritime industries with representatives from the parliament, ministries, and relevant state organisations on board MS Turella, the ferry that had been first to receive subsidies in 1978. The other keynote speakers from the Finnish shipbuilding and shipping industries highlighted the important role of maritime industries for the Finnish economy and the difficult competitive situation in the international trade.\textsuperscript{872}

At the level of rhetoric, the state did not her support a private company, but Finland’s national industrial prestige and competitiveness. In international communications, Finnish ships

\textsuperscript{868} Proposal on a subsidy for Wärtsilä-SF-Line project, hallituksen rahavaliokunnan istunto 1.3.1978 ja liite PM KTM/Heikki Muttilainen 27.2.1987, EAB1 telakka-avustukset, KTM, NA.
\textsuperscript{869} PM KTM/Pekka Rekola 7.9.1978 on state aid to get contracts for shipyards, EAB1 telakka-avustukset, KTM, NA; A.E. Vehmas, Eelä-Suomen Laiva to KTM 16.10.1978, EAB1 telakka-avustukset, KTM, NA.
\textsuperscript{870} KTM summary on shipyard subsidies 13.5.1980, EAB1 telakka-avustukset, KTM, NA.
\textsuperscript{871} PM WTT 2351 employment at Turku shipyard 4.9.1979, EAB1 telakka-avustukset, KTM, NA.
\textsuperscript{872} Keynotes of this seminar published in Navigator 2/1980.
represented not only Finnish industry but Finland itself as ‘a modern, industrial country’.873 Companies did not ask help for themselves but for Finland, as it was ‘a national triumph for Finnish shipbuilding to have earned the confidence and respect of shipowners in both east and west’.874

The first shipyard subsidies of 1978 and 1979 had been exceptional measures implemented in an atmosphere of crisis. In the first half of the 1980s, when problems in the Finnish-Soviet trade piled up, the role of domestic competitiveness became critical to long-term survival. In the autumn of 1982, the Finnish passenger ferries reappeared on the political agenda when the Finnish-Swedish passenger traffic company Silja Line planned to purchase two ferries. Silja Line was a joint operator of passenger ships from Finnish shipping company EFFOA and the Swedish Rederi AB Svea.875 Japanese Nippon-Kokan had submitted the lowest tenders, Wärtsilä’s offer was 20%–30%, roughly 100 million, more expensive, and the Swedish Kockums shipyard something in between.876

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874 Editorial, Navigator, special issue 1982.
875 With its original name of Finska Ångfartygs Aktiebolaget, literally translated as Finnish Steamship Company. In 1976, the company changed its name to EFFOA according to the pronunciation of its former Swedish abbreviation FÅA. In 1982, Svea was already absorbed by Johnson line, but to avoid unnecessary confusion, I refer to the Swedish buyer of the Silja Line’s another ferry as “Svea” instead of going into organisational details between the Svea and Johnson Line.
876 PM VN/JH (Jarl Hagelstam) on meetings with Wärtsilä 1.12 and EFFOA 2.12, 3.12.1982, Laivatilaustyöryhmän arkisto, Valtionvarainministeriö, NA; Committee report of Ship order committee 1983, Laivatilaustyöryhmän arkisto, Valtionvarainministeriö, NA
At that particular moment, the Finnish shipbuilding industry was doing relatively well. In fact, the industry had just reached its record in terms of employment with 18,000 workers. Wärtsilä’s shipyards were not in dire need of new contracts. In contrast, they had difficulties in scheduling new ferries for their fully-booked yards so that they could be completed, according to Silja Line’s needs, in 1985.

This time it was the shipyard workers’ organisation that first raised its voice to muster forces to win the valuable ship order to Finland.877 The chair of the Finnish Metal Workers Union

877 Metal Union central committee (Metallityöväen liitto Liittotoimikunta) 29.10.1982, STTY pöytäkirjat
Metallityöväenliitto Sulo Penttilä underlined in his letter to the Finnish Shipyard Association STTY: ‘The Japanese would obtain such a good reference from these projects that it would hamper Finnish shipyards’ currently good position far into the future ... The Union sees no good reason to order ships from abroad’.\textsuperscript{878} In his correspondence with the Ministry of Finance, the Metal Workers Union articulated serious concerns that the Japanese competitiveness was based on state-subsidised price-dumping: ‘As we know that Wärtsilä Oy is one of the leading constructors of ferries and other passenger ships, according to our Union’s opinion this is about price-dumping or state-subsidised exports’. The Metal Workers Union asked the Ministry of Finance to investigate whether the Japanese offer violated principles of fair trade.\textsuperscript{879}

The shipbuilding directors in the Finnish shipyard industry association STTY could do nothing but chime in with the labour union’s choir.\textsuperscript{880} Together the interest groups applied enough pressure to get social democrat minister of foreign trade Jermu Laine to nominate a working group to investigate the ship purchase and dumping accusations in late November 1982. The members of the committee were civil servants from the Bank of Finland and the Ministries of Trade and Industry and Foreign affairs.\textsuperscript{881}

Price dumping referred to a certain form of price discrimination in which a country sold merchandise in a foreign country at the price that was lower than the market price level. It was forbidden by GATT agreements and the latest GATT Tokyo Round Code 1980 had specified the definition of dumping. These international rules, which had been implemented in Finnish legislation in 1980, required evidence of price dumping and the injuries it had caused before launching counter-attacks. Allegations alone were not enough to start even an investigation. Moreover, the suspicion that a foreign company had violated fair trade was not an internal Finnish issue, nor even a bilateral issue between Japan and Finland, but the GATT should be immediately involved in such an investigation.\textsuperscript{882} Dumping charges were serious issues in international affairs.\textsuperscript{883}

\textsuperscript{2, ELKA.}  
\textsuperscript{878} “Japanilaisille koituisi tilauksesta niin hyvä referenssi, että se vaikeuttaisi suomalaisten telakoiden tällä hetkellä hyvää asemaa pitkälle tulevaisuuteen. Näiden syiden perusteella liiton mielestä ei ole mitään syytä tilata laivoja ulkomailta.” Metal Workers Union Sulo Penttilä to STTY 22.10.1982, STTY Pöytäkirjat 2, ELKA.  
\textsuperscript{879} Metal Union Sulo Penttilä to Minister of Finance Jermu Laineelle 1.11.1982, STTY pöytäkirjat 2, ELKA.  
\textsuperscript{880} STTY, Tapio Forsgren to Ministry of Finance 19.11.1982, STTY pöytäkirjat 2, ELKA.  
\textsuperscript{881} PM VM 59/10-27/82 22.11.1982 on working-group nomination, STTY pöytäkirjat 2, ELKA. The critical question of the government’s responsibility for bringing the contract to Finland was also raised in the Parliament. KK 329 and KK 330, 1982 vp.  
\textsuperscript{882} Implemented in Finland as SopS 18-19/1980; Säännöskokoelma 387/1980.  
\textsuperscript{883} Committee report of Ship order committee 1993; 4; Agreement on Interpretation and Application of Articles VI, XVI and XXIII of the General Agreement of Tariffs and Trade, SopS 18/1980; Agreement on Implementation of Article VI of the General Agreement on Tariffs and Trade, SopS 19/1980.
The Finnish civil servants did not challenge the Finnish labour union’s accusations about Japanese dumping. Yet, proving that the Japanese price was really inappropriately low was extremely difficult. Tailor-made passenger vessels had no publicly listed price, and the shipyard’s cost-structure was a company secret. Another problem was proving the injuries the Japanese dumping caused to Finnish shipbuilding. Providing evidence that the Japanese unfair competition had caused direct and considerable harm to Wärtsilä was complicated by the full-capacity employment at the Helsinki and Turku shipyards.884

From the point of view of Wärtsilä, the Japanese shipyard winning the contract was the worst possible scenario. Even the Swedish Kockums was a better choice because—as Wärtsilä’s shipbuilding director Christian Landtmant articulated—in Gothenburg the ferry would still be ‘within the family circle’, and Finnish industries could contribute to the project through subcontracting. To avoid this particular competitive bidding becoming a pattern-setting model that would encourage other Finnish ferry companies to go to the Far East, Wärtsilä also expressed its readiness to reduce its price below the construction costs.885

The ship buyer EFFOA was obviously irritated by the public outcry that had arisen out of its investment plan. According to EFFOA’s directors, Wärtsilä had not shown much interest in the project before the uproar. CEO Harry Österberg also expressed his profound disappointment that the public accusations challenged the right of a private company in a capitalist country to make a legal investment for commercial reasons, especially in such a harsh way.886 Bureaucratic work was about to cause delays for the company that had planned to contract with Nippon-Kokan in mid-December. After that, vice-CEO Palmgren announced, the seller could raise its offer.887

The Ship Order Working Group report that was to determine whether or not Finland was to start investigation against Japanese price dumping had concluded its main work at the beginning of January 1983, as indicated by the full draft of the report dated 12th January 1983. The working group was sceptical about the prospects of pressing dumping charges against Japan. It expressed no immensely positive thoughts about alternative ways to win the contract for Finland. The price difference between the Finnish and Japanese offers was too high to be compensated by domestic financial arrangements, and rather expensive to be offset by direct state aid. The working group pointed out the possibility that the Bank of Finland could deny

884 Committee report of Ship order committee 1983, 5-9.
885 PM VN/JH (Jarl Hagelstam) on meetings with Wärtsilä 1.12 and EFFOA 2.12, 3.12.1982, Laivatilaustyöryhmän arkisto, Valtionvarainministeriö, NA
886 Minutes of meeting between Hagelstam and Österberg 12.1.1983, Laivatilaustyöryhmän arkisto, Valtionvarainministeriö, NA.
887 PM VN/JH (Jarl Hagelstam) on meetings with Wärtsilä 1.12 and EFFOA 2.12, 3.12.1982, Laivatilaustyöryhmän arkisto, Valtionvarainministeriö, NA.
EFFOA from receiving foreign credit due to monetary policy reasons but concluded that applying a monetary excuse for industrial policy aims was not reasonable and probably not effective, either, because the Swedish partner in Silja Line could buy the ferry on behalf of EFFOA.888

In short, this draft of the working group report held nothing particularly surprising. For tactical reasons, however, the ministry decided not to publish it in January, but the chair of the working group announced to journalists and EFFOA’s directors that the report was not yet completed.889 What these tactical reasons were is not entirely clear based on the documentation. Most probably, they were related to the attempts to suspend EFFOA from contracting with Nippon-Kokan. Silja Line wanted the new ferry operational in the high season of 1985, and its negotiation advantages decreased as the time run short. If it contracted with the Japanese shipyard without knowing about possible dumping charges, it risked having to pay penalty tariffs. Helsingin Sanomat expressed its conjecture that the state tried to convince the shipping companies to postpone their investments for employment policy reasons until Finnish shipyards had the capacity to build the ships.890

Confidentiality is a part of good governance. Civil servants were often careful not to publish unfinished work prematurely, especially if commercial interests were involved. As a rule of thumb, however, it is a concerning sign if civil servants need to ask for moral support from the minister in charge. That was what the chair of the Ship Order Working Group did before communicating to the EFFOA’s director an explanation for the delay that ‘was not completely true’. In his letter to Laine, the civil servant announced his strategy to invoke legal complications that had delayed the working group from determining whether or not the ministry was to initiate dumping investigations. The civil servant had a moral dilemma about having to deceive EFFOA deliberately to prevent it from contracting with the Japanese shipyard: ‘Lying to Silja-Line was morally not very condonable and can result in harsh investigation afterwards if the tactical plans are ever leaked. In this situation, however, the truth would increase the risk that the ferries would be ordered from Nippon-Kokan’.891

888 Committee report of Ship order committee 1983, 13, 15.
889 PM Jarl Hagelstam to Minister Laine on the present situation in ferry order 11.1.1983, Laivatilaustyöryhmän arkisto, Valtionvarainministeriö, NA.
890 In mid-December, the working group chair had commented to the press that the report was almost finished, only lacking a grammar check but if Silja would contract with the Japanese shipyard before the working group’s last meeting, all the work would be in vain. “Silja päättänee uusista lautoista vuodenvaihteessa” HS 18.12.1982. In January, 1983, the publication of the results was repeatedly delayed: “Viking tilaamassa Japanista kahta matkustajalauttaa,” HS 7.1.1983. On the delay of the working group report also: “Vaitelias työryhmä jättää Silja-raportinsa tiistaina,” HS 8.1.1983; “Silja-raportti lykkääntyy helmikuuhun,” HS 12.1.1983; 891 ”Valehteleminen Silja-Line’lle ei moraalisesti ole kovinkaan sympaattista ja voi johtaa ankaraan jälkelavittelyleyn jos taktiset suunnitelmat koskaan vuotavat. Tässä tilanteessa toituuden kertominen Silja Line’lle kuitenkin lisäisi riskiä, että alukset tilataan Nippo-kokan ilta”. PM Hagelstam to Laine on the
After the meeting, the civil servant described his conversation with EFFOA’s director Österberg, who ‘left from the meeting as uninformed, resentful, and miserable as he was at his arrival. We may conclude that this communication accomplished its purpose, as awkward and uncomfortable as it was’.\textsuperscript{892}

If the main aim behind the state action had been to get Silja-Line to contract for the new ferries with Wärtsilä, it indeed reached its target. The government treated the Silja case with utmost urgency and authorised the state Export Credit Ltd to grant exceptionally advantageous terms for this particular domestic ship order. With the authorisation it was given, Export Credit Ltd provided credit for Silja with a payback time of 12 years for 90% of the contract price. The interest rate was 8%. As such, the interest rate was in line with the OECD export credit convention, so as not to draw uncomfortable attention. As a contrast, the payback time and small amount of cash payments required were generous compared to the normal credit arrangements in Finland at that time. Compared to the situation in which the shipping company had no public funding, the market interest rate being around 12%, the share of subvention was estimated to be approximately 28.8% of the contract price. For comparison, the normal export credits —80%, 8 years, 8%—were evaluated to be worth 14.4% of subsidies while the normal KTR-credits for domestic orders equalled only a 12.5% direct subsidy.\textsuperscript{893}

The Silja case remained a singular exception that did not anticipate future amendments in domestic terms of ship financing.\textsuperscript{894} Whereas the export credit agency was subordinated under the Ministry of Trade and Industry, the funds for domestic KTR credits came from the Bank of Finland, which was not directly subordinated to the political governance. The only enhancement of KTR credit scheme in 1983 was the novel possibility to negotiate for a two-year payback time without mortgages.\textsuperscript{895} The KTR credit was still estimated to be a 6% more expensive source of financing if compared with state-subsidised export credits.\textsuperscript{896} From the financing point of view, it was cheaper for a Finnish shipping company to buy from a foreign shipyard, and for a Finnish shipyard was more attractive to export.

\begin{footnotesize}
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\item \textsuperscript{892} “Toimitusjohtaja Österberg lopetti keskustelun yhtä epätietoisena, närkästyneenä ja onnettoma kuin hän oli tullessaan, joten voitaneen katsoa yhteydenpidon täyttäneen tehtävää niin kiusallinen ja epämiellyttävä kuin se muuten olikin.” Minutes of meeting between Hagelstam and Österberg 12.1.1983, Laivatilaustyöryhmän arkisto, Valtionvarainministeriö, NA.
\item \textsuperscript{893} PM Reijo Ranta, calculations on subsidies in ship financing 18.10.1983 “Laivarahoituksen subventiosäätiö”; PM 3/1983 Shipyard committee 13[?] 10.1983, RR/JS 327, UPMA.
\item \textsuperscript{894} PM Shipyard committee 11.11.1983, RR/JS 327, UPMA.
\item \textsuperscript{895} Minutes from shipyard committee meeting 23.11.1983, RR/JS 327, UPMA.
\item \textsuperscript{896} SVL provided export credits according to the OECD guidelines for 8.5 years, 80% of the contract price, 8% interest rate. KTR credits could cover maximum 80% of the contract price, it had up to 12-year payback time and but the interest rate fluctuated following Bank of Finland interest rate. In 1984, it was 9.5%. Shipyard committee interim report 8.3.1984; Minutes from shipyard committee’s meeting 2.12.1983. RR/JS (Jouko Sere’s collection within the Rauma-Repola’s collection, folder number) 327, UPMA.
\end{itemize}
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Silja Line’s MS Svea Regina and Viking Lines’s Viking Saga waiting for passengers in the front of Helsinki. Like icebreakers, passenger ferries were sometimes treated as special cases in the Finnish shipbuilding policy making. Even though it may not be obvious at the first sight, icebreakers and these ferries shared several attributes that influenced their technopolitical value and use: They were knowledge-intensive special-purpose vessels in which Finnish shipyards had relative competitive advantage, they were familiar to common people, and they had an important role in the Finnish foreign trade transportation. Photo: Bonin von Volker, 1985, Helsinki City Museum.

Only in the mid-1980s did the domestic orders become equal to ship export in terms of financing. In 1985, the Finnish government decided to replace the KTR-credits available for domestic orders with subsidised credits on terms that equalled the export credits granted by Export Credit Ltd. The bill was formulated carefully to avoid an impression of a policy change. No one wanted to risk the public image of a subsidy-free country even though the civil servants estimated that the subsidised interest rate was worth a 16% direct subsidy of the ship contract-
price. The allegedly state-free shipbuilding in Finland was a valuable asset in international negotiations and thus carefully nurtured by industrial and state actors. It became even more so when Finland entered into negotiations with the EC.

7.4. Quest for competitiveness on the threshold of integrating Europe, 1985–1989

The transformation of the Finnish state aid policy run parallel to the process of Finland transforming from a Cold War special case into a normal EU country. European integration has generally been understood as a culmination of Finland’s development towards a more open and competitive international economy. From this angle, it appears curious that Finland formally adopted the policy of direct shipyard subsidies as a part of its rapprochement with the European Union.

Access to western European markets was an imperative throughout the Cold War, but different sectors had very different experiences. While competitiveness in Europe was critical for forestry industries, the western market had previously had only secondary importance for the Finnish Cold War shipbuilding system. In the mid-1980s, the prolonged low demand for tankers and cargo ships pushed more producers to the narrow niches of special-purpose vessels. In this market segment, Finnish shipyards competed mainly against West European shipbuilders.


West European countries comprised the vast majority of the Finnish foreign trade. For the Finnish shipbuilding industry, however, the Western market was long only secondary to the Soviet trade. Data: SVT. Finnish foreign trade by economic blocs, percentage of total value.

The EC shipbuilding policy acknowledged national subsidy schemes as the only way to protect European shipbuilding against Asian price-dumping and allegedly unfair competition. Instead of the total abolition of subventions, the EC shipbuilding directives aimed at controlling harmful competition between EC member countries. The directives introduced a ceiling on the state aid the member countries were allowed to grant their shipyards and coupled the subsidies with industrial restructuring and capacity rationalisation. For instance, the EC fourth shipbuilding directive tolerated national governments paying a maximum of 30% of contract prices for shipyards to offset losses. In 1987, the sixth shipbuilding directive set the ceiling to 28%.\textsuperscript{899}

In competition between Finland and West European shipyards, the possibility to receive state subsidies implied a potential 28% edge.\textsuperscript{900} Finland, which only had a free trade agreement with the EC but was not a member of the community, was considered to be a European outsider like the Asian countries as far the EC competition regulations were concerned.\textsuperscript{901}

In international competition, industrial competitiveness basically means that a shipyard outperforms the competitors in productivity or quality. Under conditions in which a large share of the price might came from the state budget, competitiveness was not easily definable, let alone proven. Inadequate information about the actual subsidies in rival countries posed a

\textsuperscript{899} Todd, \textit{Industrial Dislocation}, 1991, 72-73.
\textsuperscript{900} PM WM 24.8.1987, Telakkateollisuus 1986-1987, signum 51.4, UMA.
\textsuperscript{901} PM WM 24.8.1987, Telakkateollisuus 1986-1987, signum 51.4, UMA.
critical problem for Finnish decision-making. All countries had incentives to misrepresent or understate their state aid to private industries. The Finnish understanding that all other European countries granted over-sized subsidies came from newspapers, rumours, and customers who occasionally revealed terms of competitive tenders to get Finns to raise their offer.\footnote{For instance, Finnish shipyard industry association had received information on state subsidies in Spain and Germany from Cuban negotiators. Discussion with Minister E. Rantala and director of Export Credit Ltd. E. Asp on ship credits ub Cuba 21.-26.1.1979, STTY hallituksen pöytäkirjat 1975-80 f. 1, STTY, ELKA.} More important than the accurate knowledge of foreign subsidies was the Finnish perception that all other large shipbuilding countries granted immensely high subsidies.

**Figure 39:** The distribution of Western European merchant shipbuilding between AWES countries (Gt). Data: Awes Annual Order books.

Between 1985 and 1987, the Finnish Foreign Ministry investigated two cases in which Wärtsilä competed for orders of passenger ferries against West European shipyards. In the first case, the shipyard lost a valuable option, roughly worth $175 million for two passenger ships. A Norwegian buyer decided to order ships from a French shipyard, which was claimed to have received up to 40\% of the contract price as state support. Finnish civil servants reasoned that blaming France for unfair competition was not worth the political risk: it ‘would not be appropriate, it would not give the lost ships back to Finland.’\footnote{"Monestakaan syystä ei liene kuitenkaan tarkoituksenmukaista lähteää syyttämään Ranskaa bilateraalisella tasolla tai kansainvälisissä järjestöissä; sehän ei kuitenkaan toisi hävittyä kauppaa takaisin Suomeen". PM KPO/Viemerö 573 27.8.1985 on industrial subsidies and the case of Chantiers D’Atlantique/Wärtsilä; Telegram from Oslo to Helsinki 5.11.1987, Shipbuilding industry 1986-1987, signum 51.4, UMA.} In 1987, Wärtsilä was about to
lose a domestic order for two passenger ferries to a West German shipyard. According to the Ministry, also this time there were reasons to believe that the rival German offer was subsidised.904

Paradoxically, when trying to get rid of shipbuilding subsidies, Finland ended up increasing state aid in home markets. Resulting from repeated failures to win orders against subsidised European shipyards, the government approved a proposal for renewing domestic regulation on domestic shipyard financing in October 1987. This amendment of the Shipbuilding Financing Act enhanced the terms of interest subsidies. It also permitted governmental export financing bodies to exceed the OECD terms of export credit when a Finnish shipping company purchased a ship from a Finnish shipyard.905 The tame title and dreary text of the amendment camouflaged radical changes in the Finnish shipbuilding policy. While it obligated the government to nothing, it declared that Finland was ready to cross the fine line between ‘fair’ export credits based on the OECD consensus and ‘unfairly’ subsidised export credits that exceeded the OECD terms.

The act was a compromise between somewhat conflicting aims. Firstly, it enabled the Finnish government to assist certain shipyards to win domestically important contracts and left the government all the freedom to define which were the qualifications for domestic importance. Secondly, it improved Finland’s bargaining position when negotiating the abolition of state aid schemes by signalling that Finland was not giving up on shipbuilding.906 All correspondence to and from Finnish diplomats in relevant European organisations underlined that the act implied no changes in the Finnish ‘no state aid’ shipbuilding policy; Finland supported only competitive industry, and continued its mission to reject all disruptive public shipyard subsidies. The unspoken accusation was that the Finnish government was forced to intervene in private business only because the national government subsidies in Europe disturbed free competition in shipbuilding markets.907

906 The Germany’s prime argument for state aid had been that the other competitors received public support. Paavo Kaarlehto, under-secretary of state in the Finnish Ministry of Foreign Affairs, reasoned after the government’s decision that Finland should make a bold statement about not using state subsidies against Germany in order to make this argument invalid. PM KPO/Kaarlehto 1027 on SF-line ferry and public subsidies 11.12.1987, Telakkateollisuus 1986-1987, signum 51.4, UMA.
907 An undated draft for amending the Act (1093/1985) on interest subsidy loans for domestic purchases of ships; Telegram from UM/KPO to OECD embassy 13.10.1987; Notes KPO/Sundbäck 9.9.1987 on
Finland’s policy goal in the EC was to parallel Finland with EC member countries, against which subsidies were not allowed. The competitive position of the Finnish shipbuilding industry in Western Europe and against Western European countries required a political solution that went beyond traditional economic integration. While Finnish political leaders were cautious not to risk the Soviet relations, shipbuilding financing became one arena where Finland could relocate itself within the integrating Europe.

As long as Finland was an outsider in the EC, it could only speak in favour of fair competition at public forums, and try to find allies among the EC countries. In 1985, Finnish Prime Minister Kalevi Sorsa had visited an international maritime exhibition in Hamburg and announced that Finland anticipated support from West Germany in the fight against state aid. In December 1988, Sorsa initiated formal Finnish-EC negotiations regarding shipbuilding subsidies. His main argument was that Finland was a European country with European cost structure. The state shipbuilding subsidies, anomalies in the general trend against state intervention but justified because of Asian unfair price-dumping, were not fair when used against Finland.

Finnish civil servants were generally pessimistic about Finland’s ability to claim special treatment in the EC: ‘It is realistic to expect that at least now the Commission is not ready for special arrangements for Finland’. The first problem was Finland’s relation to the European integration process. The second problem was Finland’s relationship with the Soviet Union. Officially, the EC Commission invoked bureaucratic obstacles that prevented the community from including a non-member country in a Community directive. According to Finnish negotiators, these difficulties were political rather than technical: ‘The EC should make a political decision to approve [increasing competition in European shipbuilding] and it would be a difficult decision’. In addition, some EC countries also saw the Finnish trade with the
Soviet Union as an unfair competitive advantage. As the Finnish representatives in Brussels messaged to Helsinki, the Finnish-Soviet trade 'had a bad psychological effect on member states that had watched the growth of shipbuilding capacity in Finland during the depressed 1970s.'

To strengthen Finland’s somewhat vague position as a European country, Sorsa promised that Finland would support the EC against Asian shipyards in the prospective shipbuilding negotiations between the EC, Japan, and South Korea in 1988: "It would also be a clear sign to others that we Europeans are unified and prepared to fight against state aid."

Backing the EC in four-party negotiations was about to conflict with the Finnish shipbuilding policy goals. Initially, Finland had tried to trade support for the EC in exchange for the removal of state subsidies in the European market segments where the Asians did not compete: ferries, passenger cruisers, and the Soviet trade. This attempt had failed. The EC countries had categorically refused to abandon shipbuilding aid, their best advantage, before reaching an agreement with the Asian competitors. This disappointment notwithstanding, Finland was the only country that openly announced its willingness to enter into negotiations with Asian countries; Japan and Korea hesitated, while the EC faced difficulties in getting authorisation from national governments.

In the late 1980s, the Finnish shipyards kept losing orders in both the western and home markets. Buying ships had become more profitable than building them. In 1988 and 1989, the Finnish shipyards estimated that their costs of production exceeded the prevailing

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919 The state-owned oil company Neste bought a tanker from South Korea, a Finnish shipping company purchased bulkers from Poland, and even Hollming Shipping of the Hollming corporate group that also owned shipyards, bought chemical tankers from Belgium. PM KTM 13.10.1990 on "Market Situation of the Finnish Shipbuilding industry," Telakkateollisuus 1990-1994, Signum 37.51, UMA; Non-paper 2.10.1989, "Finland-EC; Agreement on aid to shipbuilding," EY/EU Telakkateollisuus 1989-1994, Signum 37.51, UMA.
subsidised price level by 10-30% for special purpose vessels and over 50% for standard ship production.920 The price difference in favour of foreign shipyards was too high for the domestic shipping companies to be offset by patriotic feelings or domestic financing arrangements.

The Finland-EC negotiations that were once opened with the bold attempt to remove all state subsidies, ended with Finland establishing its own state subsidy system. In the fall of 1989, Finland and the EC Commission agreed on a framework in which the competing parties would mutually agree on a certain level of state aid to be allowed in any particular competitive bidding.921 This kind of mechanism would only be possible if Finland could grant state subsidies in a similar way to the EC countries.922

The special mechanism never came into force before Finland started to negotiate on joining the European Economic Area (EES) in December 1989. As a merely economic arrangement, providing an access to European internal markets without an EC-membership, EES was said to be tailor-made for neutral countries like Finland.923 In the horizon of expectation of late 1989, it looked like the EES agreement would parallel the EFTA countries with the EC members in applying the Shipbuilding Directive. It would mean that Finland would be able to solve its shipbuilding problems while still staying out of a political integration process.924 This kind of special arrangement to ensure economic benefits without political commitment was well in line with the Finnish Cold War integration policy. As such, it became the last of its kind.

7.5. Becoming a normal European country, 1990–1996

In 1990, the horizon of expectations in Finnish shipbuilding became utterly confused. As the previous chapter described, the biggest Finnish shipbuilding company went bankrupt in October 1989 due to the shortage of liquid capital and loss of shareholders’ confidence. The state engaged in myriad complex arrangements before and after the bankruptcy. Shipbuilding had become unexpectedly expensive for the public sector. A year after the bankruptcy, the bilateral trade relationship with the Soviet Union finished at the end of 1990. The collapse of the Soviet trade was estimated to have caused the loss of 150 000 jobs.925 Troubled with dire

923 Max Jakobsson, View on the Efta_EC partnership, Confederation of Finnish industries 13.4.1989, Koivisto 37, KA.
economic problems, the state of Finland had no energy, less goodwill, and a few resources to support an industry that might not be internationally competitive.

The Soviet Union fell apart. Finland submitted a formal application for EU membership in the spring of 1992. The Soviet Union fell apart. Finland submitted a formal application for EU membership in the spring of 1992.926 Finland was no longer balancing between the East and the West, but it was not quite inside Europe either. The Finnish-EC shipbuilding discussions of 1992–1995 skirted the question to what extent Finland was a fully authorised European country in the course of membership negotiations 1992–1995. In these circumstances, Finland finally adapted the principles of its shipbuilding policy according to EC standards.

In this period of the decreasing popularity of state interventions, ice-going vessels seemed to retain some of their privileged position in Finnish political decision-making. The tax deductions that rewarded ship owners for high ice classes remained in Finnish legislation. In addition, the state continued to subsidise domestic ship purchases, provide export credits, and support research and development. The Ministry of Transportation evaluated afterwards that the costs of Finnish shipbuilding subsidies, consisting of interest subsidies and ice class requirements varied between FIM 22 and 134 million in 1990–1996. It was less than the prevailing state support for the domestic shipping industry, and less than the estimated level of subsidies in rivalry countries, but still definitely more than no subsidies at all. In the era of globalisation and European integration, international competition remained a national challenge.

927 SäädK 1265/1993; SäädK 1258/1996; SäädK 1060/1999. In 2001, 50% of Finnish ships had the highest ice class (1A Super) and 30% were in the second highest class (1A). Ojala&Kaukiainen, “Finnish shipping – a Nordic exception?” 2012, 136-137.
928 In 1994–1996 the ice class deductions were applied also to ships purchased from abroad. After 1996, the ships needed to be bought from the EU countries. Collection of Finland’s law: 1265/1993; 1258/1996.
As late as November 1994, Finnish representatives at the EC complained that they were not able to participate in European shipbuilding policy-making as an incoming member country, but only as an outsider of the European Community: 'Considering that the Finnish membership [in EU] in 01.01.1995 is practically certain, this perception of the Council is curious.'

To improve its position as a European country, Finland aligned itself with the EC shipbuilding policy in global shipbuilding negotiations: Finland was formally apart from the EC group and in disagreement regarding subsidies, but nevertheless expressed loyalty to Europe. The OECD negotiations had the ambitious aim of creating a radically new discipline for global shipbuilding by removing all disruptive national subsidy schemes, but the progress had been slow. As long as the US hung on to the 'Jones Act', a federal statute requiring all cargo ships operating between two US ports to be constructed in the US, the EC countries were not willing to negotiate abolishing state subsidies.

In December 1994, the negotiating parties signed the OECD Agreement on commercial shipbuilding and repair industry. The Finnish Parliament showed strong support for the new
international order in shipbuilding that would forbid direct subsidies for shipyards, indirect subsidies through ship owners or third parties, and terms of export credits that exceeded the OECD convention or conflicted with GATT agreement on export subsidy. In cases of shipyard closure, states were allowed to support the workers only via social security benefits and providing resources for re-training. The Parliament Finance Committee articulated Finland’s interests in its statement: ‘The agreements and the decree are central to safeguarding the competitiveness of the Finnish shipbuilding industry because Finland does not pay direct shipyard subsidies’.933 To make the statement stronger, the committee emphasised that implementing the agreements needed to be carefully monitored, and all deviations needed to be sternly criticised.934

It is rather odd that still in 1994, after nearly twenty years of negotiations regarding state aid in Finland, the Parliament’s basis for its policy was that Finland did not subsidise its shipyards. It demonstrated the strength of the rhetoric and self-perception that the Finnish shipbuilding industry had been a special case in the European comparisons.

The agreement never came into force as the US eventually decided not to ratify it. Without international consensus, the EC retained its policy of industrial support. Balancing between principles of undisturbed competition and problems with local employment, the EU continued regulating the state aid ceilings instead of eliminating subsidies. Even the Finnish civil servants, who had been thoroughly seasoned in trade and industrial political negotiations, expressed their frustrations over this decision: ‘We feel that state subsidies have distorted competition to a significant degree both on the world market and in Europe. We would have preferred to join a Union where this was no longer the case.’935

Finland joined the EU in 1995. In 1996, the Finnish government began to grant direct subsidies for shipbuilding. Even though the Finnish state aid, which was up to 9% of shipbuilding contract prices, was relatively low, it marked a policy change. Finland could no longer claim it had no standing policy for direct shipbuilding subsidies.936 Competition within the EU and global shipbuilding markets continued to rely on national financing arrangements, whether

933 “Sopimus ja asetus ovat keskeisiä Suomen laivankomennusteollisuuden kilailukyvyn turvaamisen kannalta, koska Suomessa ei makseta suoria telakkatukia.” Talouspoliittisen valiokunnan lausunto TaVL 7/1995 vp.
934 Talouspoliittisen valiokunnan lausunto (Committee statement of the Parliamentary Committee on Economic Policy) TaVL 7/1995 vp.
they were direct subsidies, subsidised export credits, or support for research and innovation.937

7.6. Conclusions: State and national competitiveness

This chapter has dealt with the minutiae of ship financing arrangements. Discussions of state interventions centred on seemingly bureaucratic administrators who lack the charisma of front-row politicians and on technical details that lack the attraction of shiny new passenger cruisers. Sometimes the politics of the financing arrangements were hidden behind monotonous talk about interest rates and percentages. Sometimes the actors concealed the politics of their decisions in tedious style on purpose to avoid attention.

Nonetheless, the state financing in international competition brings us to the economic core of the techno-economic system. The large passenger ship contracts in the 1980s illustrated how technical competence alone was not enough to build those ships. Alongside technical quality, industrial competence was shaped in the fine print of the financial arrangements. As those arrangements were state-level political decisions, which had concrete material consequences as well as long-term effect on industrial structure, they also captured technopolitics of national welfare and prestige during the transition period at the end of the Cold War shipbuilding. By documenting the pivotal decision-points in detail, I wanted to turn the spotlights onto the messy complexity of policy making, the insecurities of decision-making, and the turbulent dynamic between internal and external transformations.

This chapter adds to our understanding of the structure and style of the Finnish Cold War techno-economic shipbuilding system because the changing environmental conditions of the system re-politicised the established practices and principles. At the mature stage of the Finnish shipbuilding system, shipbuilding companies had substantial control over their financing. The pre-payments of the Soviet trade provided a considerable source of liquidity. Thanks to the pre-payments, most ship projects seldom needed external financing either before or after deliveries in the Soviet market. The pre-payments also contributed to ensuring that the terms of domestic and western ship financing posed not critical problems. The Soviet decision to terminate the prepayment policy and eventually to demand credit-based financing, also re-introduced the domestic and western markets into the Finnish shipbuilding discussions.

Increasing weight of the domestic market is a typical reaction to recession in international trade. What was interesting in the Finnish case was that the vertical integration between ship

owners and shipbuilders never gained substantial momentum during the shipyard crisis, with the exception of ferries operating on the Baltic Sea. On the one hand, the price difference between Finnish and foreign yards in standard-type cargo vessels was typically too high to be justified by economic nationalism. On the other hand, only vessels that were visible to the public carried the technopolitical meanings of national prestige to the extent that buying domestic showed support for industrial policy and business goals.

High inflation posed the most critical financial problem for the mature shipbuilding system. The fixed prices and long delivery times of the Soviet trade, as well as the unpredictable cost-increase that was faster than in rival countries, hampered cost calculations and limited possibilities to secure sufficient profit-margins in contract negotiations. The cost guarantee system constituted an essential system component that helped the shipyards to alleviate the harmful effects of economic fluctuation.

It was more down to managerial accident than an implication of political trajectory that the oil shock transformed the cost guarantee system from a state guarantee into a strikingly beneficial subsidy. The original cost guarantee system was pre-oil crisis design, and created in circumstances where it was unimaginable for production costs to explode in the way they did. The cost guarantee system was too rigid to accommodate adjustments in a short period of time. In the mid-1970s, it was the scale of the benefits the cost guarantee system provided to the shipbuilding industry rather than the principle of inflation compensations as such that raised objections. Nonetheless, the public outcry eventually challenged the very existence of public guarantees against inflation.

This chapter approached the state-industry relationship from the perspective of the reformation of the Finnish ship financing policy in relation to western competition. The section thus contributed to understanding of state-interventions in post-Cold War shipbuilding. It was a relatively clear and widely accepted principle across the western world that harmful state subsidies for incompetent industries were incompatible with fair market competition. Finnish shipbuilding directors and politicians agreed on this, and so did European politicians and industrialists. However, the state’s role in supporting national competitiveness was never a simple question of principles. The controversy surrounding the policy-making arose from the fuzzy definitions of ‘subsidy’, ‘uncompetitive industry’, and ‘fair competition’. All countries and interest groups had motives to interpret them in the way that justified their own actions and claims.

Finnish governments since the late 1970s may have had a clear policy to diminish the state’s role in the economy and to priorities competition above employment, but these ideas did not translate into action. Policy-making on the threshold of a paradigmatic change was not about
grand statements. Instead, the Finnish shipbuilding policy took shape through ad hoc decisions that were often specific, exceptional, and made in haste. Instead of strategic decisions about re-shaping the overall business environment in Finland, governments made one-off decisions to occasionally counteract the effects of global competition and to bring passenger ferries back to Finland one ship at a time.

My purpose is not to give the impression that the discrepancy between the principles and practices in the use of state subsidies made Finland an exceptionally hypocritical country. Most nations had to go through similar painful conversations on the state’s role in industrialisation and deindustrialisation in their own local context. Comparing those globally interconnected processes and dynamic between countries would be an important topic for future research. What I wanted to point out in this thesis is that big policy decisions never had just one rationale. Those rationales, like national welfare and national competitiveness, were often in conflict.

Finally, this last chapter scrutinised the disintegration of the Finnish Cold War shipbuilding system in the period when Finland transformed from a Cold War special case into a normal EU member state. In Cold War shipbuilding, being a special case had several concrete consequences. Often, they were linked to the restrictions that the proximity of the Soviet Union posed to Finland’s capacity to participate in European integration. As long as political integration was beyond the realm of possibilities, Finland tried to repair its competitiveness in Europe through certain innovative arrangements, like the special subsidy negotiation mechanism in 1989.

For a while, also the domestic shipbuilding politics nurtured an idea of Finnish specialness. In here, it suggested that unlike other European shipbuilding countries, Finland did not need permanent state support but only discretionary grants at the time of temporary crisis. Looking from the outside, Finland’s special position referred to an advantageous Soviet market that gave European countries the moral leeway to use subsidies in competition against Finnish shipyards. By the end of this section, Finland had aligned its shipbuilding policy with the European standards, and abandoned its special pose.

The disintegration of the Finnish Cold War shipbuilding system as a process of losing its special status took place in parallel to the process of Finland relocating itself on the post-Cold War world map. As this section showed, in the field of the Finnish shipbuilding policy, the rapprochement with the EC had started before the collapse of the Soviet Union had become evident. For a moment, Finland was adapting to two different futures at the same time: the one with the Soviet Union and one with integrated Europe.
8. Conclusions

8.1. The Cold War techno-economic shipbuilding system

The Daily Telegraph’s article ‘Finlandisation of shipbuilding’ coined two statements that constituted the core of the established narrative of Finnish industrialisation during the Cold War. The first was that the Finnish shipbuilding industry developed along a distinct path, a route that was special only to Finland, where shipbuilding was profitable, stable, and a permanent business. The second was that the special characteristics of Finnish shipbuilding during the Cold War came about merely thanks to the opportunities that Finland’s position in the Cold War.

The first research objective of this study was to examine the function and development of the Finnish techno-economic shipbuilding system and to determine whether it did indeed present a case of Cold War history: did it follow a specific trajectory or adopt certain style or structure because of the Cold War, or merely during the Cold War?

During the first part of the Cold War, the Finnish shipbuilding industry expanded, specialised in special-purpose vessels, and concentrated into fewer but bigger units. These trends were common in Western Europe, but their timing was particular to Finland. Specifically, Finnish shipbuilding specialised in design-intensive production earlier, and down-scaled the production capacity later than its Western European rivals.

The system approach enabled me to break the complex phenomenon into smaller pieces, and to analyse the interaction within the seamless web that consisted of interconnected technical, economic, administrative, and other components. With the introduction of the concept of techno-economic system, I underlined the coexistence of economic and technological development in civilian shipbuilding. The LTS framework strongly suggests that technological systems proceed linearly towards greater stability and control. However, the Finnish shipbuilding industry as a techno-economic system was always bound to the cyclical nature of the global shipbuilding market. The concept of techno-economic system provided an analytical tool to address this constant tension between stability and change as an elementary force in the transformation of the Finnish shipbuilding.

At its stage of maturity in the 1970s, the Finnish techno-economic shipbuilding system gained momentum and expressed a specific style. The system appeared to be profitable with optimistic future prospects. Even after the oil crisis, when global shipbuilding production fell, Finland resisted deindustrialisation for approximately a decade. Only in the 1980s, the increasing problems in the Soviet and Western trade, together with pessimistic future expectations, forced the shipbuilding companies to descale their production capacity.
The expansion of shipbuilding in the Cold War Finland was primarily based on demand and supply; the companies regarded it as profitable to build ships for the Soviet Union and other countries, and their customers found it beneficial to buy those ships. In this very fundamental sense, the development of the Finnish shipbuilding system was not unique. It is neither not exceptional that large companies employ several means to shape their relationship with the state and to gain control over their operational environment, including mergers, cartels, and lobbying. What was unique, however, was that the Soviet planning economy and the Finnish-Soviet special relationship together provided particular and unique opportunities for the Finnish Cold War shipbuilding system to have a considerable impact on what the Soviets bought and which Finnish companies sold. While never being a completely closed system, the Finnish Cold War techno-economic shipbuilding system at its mature stage achieved an extraordinary degree of stability.

It is important to note that the system momentum does not imply economic growth but merely the system’s inertia and ability to steer its own development. Characteristic of the Finnish Cold War shipbuilding system was that it seemed to gain momentum from circumstances that restricted its room for manoeuvre. The impetus for the rapid post-war expansion of Finnish shipbuilding came from the war reparation production, where national security reasons could partly override private commercial interests. Early in the Cold War, the lack of alternatives for the Soviet ship buyers supported the establishment of the Finnish-Soviet Cold War ship trade. The Western technology embargo and the shortage of capital made bilateral trade with Finland into a privileged choice among the Western trading partners of the Soviet Union. From the point of view of the Finnish shipyards, the lack of financial arrangements and uncompetitive pricing restricted their opportunities to choose their trading partners.

Once the bilateral Finnish-Soviet ship trade partnership was established, it framed the development of the Finnish Cold War shipbuilding system on the whole. The bilateral institutions for trade and non-commercial cooperation constituted the main technopolitical infrastructure that shaped the industrial structure. These institutions had necessarily no intentions of their own, but they had agency. The institutions shaped the industrial structure by determining the types and quantity of ships a yard could produce. For instance, the centrally-coordinated clearing trade system contributed to the profitability of the Finnish Cold War shipbuilding because it was convenient to use with the socialist planning economy, and suitable for making high-volume ship procurements. In its mature stage, the Finnish Cold War shipbuilding system clearly benefited from the bilateral trade relationship with the Soviet Union without having to suffer from the disadvantages of state-level bilateralism.

The Finnish-Soviet trade relationship was not the only important factor contributing to the expansion of the Finnish Cold War shipbuilding system. In the mature system, it was the co-
existence of the three different markets—western, eastern, and domestic—that afforded the Finnish shipyards advantages in political negotiations with state actors, and in technical and financial negotiations with their customers. Different markets provided a counter-cyclical effect that smoothed out some of the market fluctuation, and products developed for one customer could provide a springboard to another market. The Finnish Cold War shipbuilding system did not prosper as it did because it was geographically adjacent to the Soviet Union, but because it was located between east and west.

Large technological systems are complex entities that solve problems. The Finnish Cold War shipbuilding system developed structures and practices to control the sources of insecurities that prevented it from fulfilling its system goal. This study examined the Finnish shipbuilding system from five perspectives: the technopolitics of shipbuilding, non-commercial cooperation, bilateral trade and payment infrastructure, industrial reorganisation, and state aid and financing.

In Chapter 3, the industrial actors recognised as a critical problem that certain exceptional ship contracts were determined by political actors in cabinets to which the shipbuilding engineers had no access. To advance their negotiation position, the industrial actors formed nearly a symbiosis-like relationship with certain state actors and systematically moulded their offers to make them more appropriate to be used as technopolitical tools to enact national aims in security, prestige, and welfare.

Chapter 4 described the Finnish-Soviet scientific-technical and industrial cooperation in shipbuilding. The active participation of the Finnish industrial companies was motivated as a solution to the critical problem of how to shape the Soviet demand structure and to improve the competitive position in the Soviet market without lowering prices. In the course of solving these problems, the Finnish shipbuilding system as a whole enforced their engagement with the Soviet scientific-technical organisations. This cooperation was not completely without concrete economic and technical motives, but it was carried out primary as a performance of peaceful and mutually beneficial cooperation between capitalist and socialist countries.

Chapter 5 addressed critical problems related to the Finnish ship trade that were originally the lack of capital and the lack of predictability. The Finnish-Soviet clearing trade and payment system emerged as a solution to these problems. The bilateral clearing trade system and the integral five-year and long-term plans improved to a significant degree the system’s ability to address the production in a longer time-horizon than what was typical in commercial shipbuilding. The front-loaded Soviet pre-payments that had established as an elemental part of the clearing payment system provided an irreplaceable possibility for the Finnish shipyards
to engage in high-volume ship export without extensive export credits the Finnish state could not afford.

In Chapter 6, the critical problem the Finnish shipbuilding system sought to address was the imbalance between the expanded domestic capacity and the plummeted market demand. The problem was further emphasised when competition replaced coordination in the relationship within the shipbuilding companies in the early 1980s. Together with the state, the Finnish shipbuilding system tried to find a new balance between competition and coordination, and to adjust the capacity to the new market conditions. The style the system expressed when muddling through the reorganisations was generally inconsistent. The new balance was approached through ad hoc decisions, accidents, and struggles.

Finally, Chapter 7 posed the critical problem of achieving national competiveness in international competition. The shipbuilding system recognized it as a critical problem at a time when the stability-creating elements of the Cold War Finnish shipbuilding system were no longer enough to nurture high-volume shipbuilding without extensive state aid schemes.

When attempting to solve these critical problems, the Finnish Cold War shipbuilding system often did so in a style that also gave the system a distinct flavour. At first, the Finnish shipbuilding system learned to act proactively at the stage in which political constrains were still malleable. They bargained with the political powers by providing them with technology to be used as technopolitical instruments in domestic and international affairs. The proactive, continuous, and intensive interaction between politics and industry offered possibilities for industrial representatives to increase the political demand for certain technologies. Such technopolitical manoeuvres are not exclusive to Cold War business but the polarised world order prodded the Finnish shipbuilders to come up with technological designs and offers that made a particular good fit within this political context.

Another central element of the national style that arose out of the Cold War political context was the ideological flexibility in the Finnish-Soviet affairs. The profit-driven companies, whose directors could hardly be accused of ideological sympathy for socialism, learned how to accommodate Soviet interests in security and prestige. For their part, they reinforced the image of Finnish neutrality and accepted, in part, the superpower’s need to be recognised as a technology developer. When it was not possible to escape the Soviet influence, the central actors preferred to keep the Soviets within a hand-shaking distance to be better able to control the risks. Trust between partners decreased the transaction costs and the risks in their future-oriented planning.

Finally, the coordinated competition characterised the national style of the Finnish Cold War shipbuilding system. It stemmed from, and was aligned with, the general Finnish culture of
cooperative capitalism. However, within the Finnish shipbuilding system, it got a particular Cold War flavour. The motivation to coordinate the competition between companies to avoid destructive rivalry stemmed from the restricted size of the advantageous Soviet market. One remarkable outcome of this coordinated competition was technical specialisation in special purpose-vessels that became critical to the industrial survival at the end of the Cold War. In the light of this study, the technical specialisation of the Finnish Cold War shipbuilding system appears not as a systemic strategy successfully implemented but as a creative answer to domestic competition, low productivity, and lack of capital.

8.2. The shipbuilding state

Sociologist Pentti Alasuutari has characterised Cold War Finland as a single state-run corporation, Finland Inc. (Oy Suomi Ab) that generated revenues through export trade and invested them in the building of the welfare state.938 His use here of the same metaphor as American economists when they refer to the Soviet Union and its state-controlled economy939 may not be a coincidence. State and industry being closely bound together through shared interests and personal networks truly characterises Finnish industrialisation during the Cold War. In this study, the choice to employ the system concept as the framework of analysis provided useful conceptual tools to distinguish between the system goal and the system governance.

The second objective of this study was to examine the interplay between politics and industry during the Cold War. It has analysed the technopolitical gravity the Finnish shipbuilding system gained in foreign affairs, and in domestic trade and industrial policy and the functions the system acquired as a resource for the Finnish state when the state exercised its policies.

The Finnish Cold War shipbuilding was not a necessary or given large technological system in the sense of being a national imperative. Finland did not need Finnish shipbuilding industry to survive or to become an industrial country. The Finnish Cold War shipbuilding system became central to state-level decision-making, weightier than its size suggested, and more visible than many other industrial sectors, because it satisfied a diverse set of national needs. These needs were often non-technical, and related to national security, national welfare, and national prestige. Finland did not need Finnish ships, but it needed political tools to improve its national security, technological development to build techno-nationalistic prestige, and industrial employment and technology exports to construct the welfare state.

938 Alasuutari 1996, 74–76, 266.
These national technopolitical needs were not static or inherent but varied over time. In the 1950s, shipyards were crucial to national security and national welfare; shipbuilding was instrumental in establishing positive interdependences with the Soviet Union. Simultaneously it provided industrial jobs that were essential for feeding the growing urban population. In the 1960s, shipbuilding established its position as the backbone of Finnish-Soviet economic cooperation and pioneered Finnish manufacturing exports to Western countries. In the 1970s, the shipbuilding industry contributed to Finland’s image abroad as a modern and neutral country. In the 1980s, the shipbuilding industry and related policy discussions provided a space where the Finnish political leaders could reimagine an internationally competitive Finland and redefine its position in relation to European integration.

A distinct characteristic of the relationship between the state and the Finnish Cold War shipbuilding system was its connections to the national security considerations. Finnish Cold War diplomacy needed concrete technology projects to make the political rhetoric of active neutrality to appear alive and solid. The Soviet Union was a nuclear superpower possessing military and strategic power that Finland had no means of challenging. Technology trade in Finnish foreign affairs was not an instrument of such power but an asset in negotiating with a powerful neighbour.

Finland’s international status as a neutral country emphasised rather than decreased the national security aspects of the technology trade. From the national security point of view, the extensive ship trade with the Soviet Union was both an advantage and a risk. The Soviet Union was ready to use trade as a political tool, but it also benefited from having the Finnish shipyards as an extension of its planning economy. Naturally, this special relationship should not be mixed up with the concept of political friendship. The ‘friendship’ between the countries was in reality cold and broken. The special relationship had its foundation in opportunism, experience, convenience, and the lack of alternatives.

Thus, during the Cold War, state actors often acted as if they shared the goal of the shipbuilding industry. Nevertheless, Finland was not a state-led company. The state was not part of Finnish Cold War shipbuilding in the sense that the political decision-making or state administration were under its control. From the point of view of the shipbuilding system, the national consensus appeared not as a concept or a shared goal that united public and private sectors together into a unanimous nation-level agent. It was rather as a common arena where different stakeholders could compromise and negotiate compatible goals. This opened up questions on the mutually shaping relationship between the state and the industry. To what degree and how could the state actors control the industrial transformation or where they under the control of the techno-economic system?
From the point of view of technopolitics of shipbuilding, as examined in Chapter 3, the Finnish industrial actors were not in the position in which they could dictate the state leaders in Helsinki, Moscow, or Washington D.C to buy their products but they could deploy technopolitical arguments to make certain affairs more appealing. The nuclear icebreaker project and the efforts to sell icebreakers to the USCG illustrated, how the Finnish shipbuilding industry employed technopolitical arguments that invoked to state’s need for national security and prestige as means of persuasion.

Chapter 4 described how the Finnish Cold War shipbuilding system repurposed the institutions of scientific-technical and industrial cooperation, which had originally been Soviet political instruments, as tools to improve corporation branding in the socialist market. While the Finnish shipbuilding system could never control the Soviet demand, the bilateral cooperation organs provided them with an interface to the Soviet economic planning. This interface could then be used to negotiate the future demand structure and to polish one’s corporate brand.

The institutions of bilateral trade and payment system further complicated the distribution of power between state and the shipbuilding system because it effectively translated private ship contract into state-level issues. At first, the clearing system allowed industrial actors to get a seat in the intergovernmental negotiation tables in which the trade exchange was outlined and through that to enhance the Finnish shipbuilding system’s control over the Soviet trade. However, the bilateral trade institutions also empowered the state actors to participate in the management of Finnish-Soviet ship trade in fashion that occasionally decreased the companies’ control over their own contracts.

In Chapter 6, the relationship between the state and the shipbuilding system was examined from the point of view of industrial reorganisation. From this perspective, the economic sovereignty together with the future prospects determined how the shipbuilding system could exert leverage over the state when bargaining on state interventions. As a general trend, the possibilities of the industrial actors to control the system development decreased towards the end of the Cold War. However, at certain exceptional moments of crisis and turmoil, industrial actors were also able to seize the opportunity and to make themselves into system builders of the post-Cold War shipbuilding.

Finally, Chapter 7 investigated the reformulation of the Finnish ship financing policy in face of globalisation and European integration. The abilities of the Finnish shipbuilding system to continue along the distinct trajectory, to opt for unique mechanisms, and claim special treatment diminished towards the end of the period. Instead of maintaining the established
claim that the Finnish shipyards received no extensive state subsidies, the Finnish ship financing policy eventually had to adapt to the Western European conventions.

The Cold War polarised worldview tended to categorise countries according to state involvement in the economy—either into authoritarian state-planning economies or liberal free-market capitalist countries. Even though such a juxtaposition between ideal models of free markets and central planning never existed, in the Finnish discourses, the Cold War context emphasised the separation between private and public.

The Finnish governments were eager to invoke the principle of demarcation between state and private companies in a capitalist market economy, according to which the political actors could only influence the general institutional environment, not intervene in specific business plans and projects. However, as every empirical chapter in this study has demonstrated, Finnish politicians did intervene in private business. Presidents and prime ministers promoted private ship projects to foreign leaders even more frequently than they used their influence in the general institutional environment. Even at the end of the Cold War, when the general trend in Finnish economic policy was towards a more liberal economy, it appeared easier for the governments to make decisions on unique and specific measures to support single projects or specific ship contracts than it was to pass new bills that would influence all companies and ship projects equally. This did not remove politics from decisions, but rather underlined its presence.

8.3. The disintegration of Finnish Cold War shipbuilding

The Cold War did not kick-start shipbuilding in Finland. Neither did the end of the Cold War end Finnish shipbuilding. The Cold War Finnish shipbuilding as a story of the rise and fall of an industry is meaningful only if we delimit our focus onto the rise and the fall of the distinct techno-economic system that characterised a certain period in the long and still ongoing history of Finnish shipbuilding.

The third question of this study concerned adding to understanding of system disintegration. It did this by answering how the system lost its momentum and the style that characterised Cold War Finnish shipbuilding. Scholars of Large Technological Systems typically credit technological breakthroughs as the prime driving force in the system development and momentum shifts. While the technological components of the Finnish shipbuilding system, such as the building berths, cranes, or R&D laboratories, clearly added to the system momentum in the 1960s and 1970s, they were not its cause. Instead, those essential facilities came into being because the company managers chose to invest in them. Critical for these strategic investment decisions was the trust in the future of the profitable business and, in particular, trust in the continuous Soviet export.
The mature Finnish Cold War shipbuilding appeared as profitable and stable business; it gathered momentum from specialised practices and institutions, and enjoyed unquestioned political support. Based on the empirical research, this kind of system prevailed only during a short period in the 1970s. The system disintegration process had started in all the cases studied well before the collapse of the Soviet Union.

Two external transformation processes put pressure on the Finnish shipbuilding industry and industrial policy to change from the mid-1970s onwards: the change in Soviet economic priorities in foreign trade, and global price competition in shipbuilding. The momentum of these forces was too enormous for the Finnish political and industrial actors to halt. The Finnish shipbuilding system descaled and converged with shipbuilding industries in other Western European countries at a speed that surprised many. However, a more interesting question than why the Finnish Cold War shipbuilding system disintegrated is why this process took so long and why it was a surprise.

Two characteristics of this disintegration process are especially worth pointing out. First, instead of being a gradual process of dismantling of unique system elements, the system disintegration initially strengthened the special style of the system.

Second, the meanings the actors gave to the Finnish Cold War shipbuilding and its special position in the Soviet market, did not realistically reflect the actual decreasing values of these meanings. As a contrast, the disparity between the illusion and the reality grew larger towards the end of the Cold War. Finlandisation as a systematic practice in Finland to avoid the public discussion of topics that would be interpreted as criticism of the Soviet Union made reality look fuzzy. Even though everyone would know that the rhetoric of the Finnish-Soviet special friendship was merely rhetoric, no one knew where exactly the line between reality and rhetoric was located. Shipbuilding without bilateral Soviet trade was perhaps not unbearable, but for a long time, it was unimaginable.

The conceptualisation of Finnish shipbuilding as a techno-economic system helps to explain this disintegration process. As a conceptual note, ‘system momentum’ appears as more appropriate in explaining the rigidities in systemic change than the commonly used notion of path dependency. Decisions made in the past pushed the development onto a certain trajectory, but those decisions were seldom irreversible. The large and heterogeneous network of mutually interacting components composed a shipbuilding system that was more than the sum of its parts. When the function and value of the system components weakened, the shipbuilding system as a whole enforced established meanings of being integral within the Finnish-Soviet special relationship. The momentum of the system carried it forward along the
Cold War trajectory a while longer even when the political and economic rationales no longer provided fresh impetus.

Chapter 3 addressed the system disintegration from the point of view of technopolitics of shipbuilding. The nuclear icebreaker negotiations demonstrated how the political arguments, that were once enough to make the project as a celebrated showcase of boundary-crossing cooperation and propelled it to a successful affair, lost their value only in five years in the second half of the 1980s.

In the mature system, the momentum of the system expansion originated from economic rationales of Soviet demand and Finnish supply. The elements of non-commercial scientific-technical cooperation existed from the beginning of the Cold War trade, but the industry perceived them long as a burden to be minimized. As Chapter 4 demonstrated, the role of scientific-technical and industrial cooperation was emphasised during the second part of the Cold War. It took place as the system actors reacted to the external changes in the political and economic context that challenged the Finnish privileged position in the Soviet market. By adding fresh impetus to the system’s momentum in the form of the scientific-technical and industrial cooperation projects, the system actors tried to prevent its disintegration.

Chapter 5 described how the bilateral institutions of trade and payments—which were originally neither a political choice nor a symbol of political relationship—eventually became both. The bilateral institutions did not secure the continuation, profitability, or stability of the Finnish-Soviet ship trade. These qualities resulted from political preferences, managerial practices, and environmental conditions. However, the fact that industrial and political actors believed in these qualities made a difference. It translated the bilateral institutions into a promise of successful continuance of the Finnish-Soviet privileged ship trade.

From the point of view of the industrial reorganisation discussed in Chapter 6, the profound change took place in the commitment of corporations to the Finnish Cold War shipbuilding system. In the mature stage, the Finnish shipbuilding companies had cooperated in order to compete against their common enemies—Soviet price negotiators that tried to spark off price competition among the Finnish shipyards, and foreign shipbuilders that lowered international price level below the break-even level. As the several negotiation rounds from the late 1970s to the early 1990s demonstrated, the rationale to coordinate Finnish ship production at the national level prevailed longer than the willingness of the industrial actors to compromise. The process was long and complex. The quintessence of the transformation was captured in the moment when the biggest Finnish shipbuilding company preferred integration with Norwegian cluster instead of remaining part of Finnish domestic shipbuilding system.
Finally, the last case study on ship financing policy emphasised the chaotic nature of system disintegration. While there was a strong, broadly accepted, and clear policy line that Finland did not subsidy shipyards, the actual ship financing policy materialised as a result of several unique and particular decisions during the 1980s and early 1990s. From this perspective, the systemic change was not about strategic statements and their implementation but about incremental adjustments and practices that were meant to be only temporary but that became established as conventional once again demonstrating the contingency of industrial transformation.

8.4. Finlandisation of Shipbuilding and Cold War History of Industrialisation

Finlandisation of Shipbuilding in its original use in the newspaper title meant nothing exact. While Finlandisation might have referred just to the asymmetric relationship, it also contained a large and diverse set of political statements, moral convictions, and good and bad personal recollections to the extent that no abstract definition could dispel. Even as an allegedly noncommittal term, the use of ‘Finlandisation’ concept came with a reference to a certain place and time, the Cold War Finland, suggesting that there was something special there. This study set as its task to add to our understanding about what that ‘something special’ was in more accurate terms. I chose not to use the overloaded and ambivalent term of Finlandisation as an analytical concept. Instead, I employed the theoretical concept of national style.

The term of ‘Finlandisation’ is not so much a concept but a controversy about an agency within the international Cold War order. At the beginning of this thesis, I identified three dimensions of the Finlandisation debate including the abstract discussion of political sciences not necessarily connected to Finland, the normative argumentation related to the Finnish political doctrines, and the moral outrage at the action of Finnish individuals in the past. The debates are fueled by historical evidence and experience, but they tends to focus on state-level submission to the military power or micro-level rent-seeking behaviour of individuals. Through recognizing the political role of the meso-level actors, the companies, as well as the structural consequences of the Soviet influence in Finland, this ‘Finlandisation of Shipbuilding’ thesis participates in the conversation of the industrial legacy of the past politics in Finland.

One of the meanings of ‘Finlandisation’ was a reference to the theory of an asymmetric power relationship between countries with different social systems. As a contrast to the two other similar concepts, Americanisation and Sovietisation, Finlandisation underlines the agency of the weaker party. Finland being relatively small, relatively neutral, and relatively civilian provided a context for a state-industry relationship that was somewhat similar to and somewhat different from the infamous examples of military-industrial complexes in larger
countries. Here, the Finnish shipbuilding adds nuances to the picture of Cold war industrialisation.

This study turned the research focus from high politics to the economic and material consequences of international tensions. Looking at the Cold War from the point of view of the Finnish shipbuilding, the ideological confrontation never appeared as a strict juxtaposition of mutually exclusive and contradictory world views. As the Finnish shipbuilders witnessed, the Cold War competition increased state coordination of trade and technology production in capitalist countries, while simultaneously encouraging the socialist countries to enjoy the benefits of market competition. The international confrontation was always accompanied by convergence and transnational cooperation.

Another meaning of ‘Finlandisation’ was the debate on Finnish neutrality and the nature of its relationship with the Soviet Union. This thesis demonstrated that Finland was located in between east and west but not exactly in the middle of these two extremes. The weight of the superpowers was inversely proportional to their distance from Finland. Even though Finland advocated democratic capitalism and was thus inclined to lean towards the west, the Soviet Union was close by, and therefore had a stronger influence over the Finnish shipbuilding system. The Finnish-Soviet affairs were built on the foundation of the countries’ need for national security, national prestige, and national welfare.

This study does not tell whether the Finnish Cold War external relations were merely centered on geopolitical survivalism or economic opportunism. It does tell, however, that political, economic, and other interest co-existed and also conflicted.

Perhaps the most sensitive debate related to the concept of ‘Finlandisation’ was the Finnish retrospective evaluation of certain action and non-action. Nations are not impartial judges of their past, nor are industrial companies. The established heroic narratives of the Finnish Cold War ship trade chime in with the history of nation building. Both tell the story of how the small Finland was able to resist the Soviet oppression and finally established its natural place as a normal, Western European industrial country. This narrative of collective self-understanding did not easily accommodate Finnish actions that proactively and willingly adopted Soviet interests to gain economic and political advantages.

Finnish industrial development was simultaneously an abstract national goal and a very human process. Engineers, managers, and investors made their decisions based on their experience and expectations within a framework that was bound by technical, economic and institutional factors. State actors—exercising executive, legislative, or administrational power—gave industrial change an impetus and direction through direct and indirect interventions. All the rationales behind certain decisions were subject to changes over time.
History may not provide complete instructions on how to establish a competitive industrial cluster but it can teach us about the socially constructed nature of competitiveness. History may not tell the future industrial managers how to escape a bankruptcy, but it teaches us empathy for those making decisions with incomplete information.

With the strong connotation of the Cold War, ‘Finlandisation’ is also a code that implies that the past actions and practices belong to a world that no longer exists. The Cold War as a transforming political, economic and technological framework constituted a revolving stage on which the Finnish shipbuilding industry developed. Yet, this history did not end at the end of the Cold War. The concrete building berths, the supply chains, and technical expertise of the Finnish shipyards are still today expressions of the industrialisation that took place during the Cold War. When Finnish ministers took upon themselves in person to find new owners for the Helsinki shipyard during 2014 and 2015940, or when the director of the Finnish state-owned shipping company promoted Finnish icebreakers to the President of the USA in 2016941, it all echoes the heritage of the Cold War.

As this study has shown, the Finnish shipbuilding industry was shaped by the political context of the country. The industry also shaped the economic foundation for Finnish social development. In that way, shipbuilding proved to be one aspect not just of Finland’s past politics but also of the historical process that made Finland into what it is now.

In this thesis, ‘Finlandisation of Shipbuilding’ was not a concluding statement but rather the point of departure. In the future, ‘Finlandisation of Shipbuilding’ could outline avenues for further research: critical re-evaluation of the intermingling of geopolitics, economy, and technology in the Cold War, and its legacy in the post-Cold War world.

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