Yards Ahead

How the NSM managed to attract international shipbuilding orders whilst other shipyards built very few ships during the Great Depression

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1. Introduction

In 1922, only Germany, the United States and Great Britain built a higher tonnage of ships than the Netherlands did.[1] In the early 1930s, Dutch shipbuilding had started experiencing the Great Depression, a global economic downturn which led to a contraction in global trade. With that contraction in trade came a decline in shipping, which had a knock-on effect on shipbuilding. After 1929, the orders from foreign shipping companies for Dutch shipbuilding decreased markedly. The few remaining orders mostly came from Norwegian customers, reducing the share of the Dutch shipbuilding of the world export market to only 4,7% of global tons launched.[2] Moreover, these Norwegian shipping companies only ordered from a small number of companies.

This change is interesting because other states with a large shipbuilding industry managed to maintain a sizeable percentage of the world shipbuilding market, whilst Dutch shipyards failed to keep their international customers. Most Dutch shipyards did not manage to stay internationally competitive, with the exception of the Nederlandsche Scheepsbouw Maatschappij (NSM). This begs the question: What did the NSM do that distinguished it from other shipyards? In this research, I will explore the Dutch shipbuilding industry in the early 1930s and how they performed internationally during the Great Depression.

This thesis will examine how the NSM managed to outperform its competitors with regards to foreign orders from 1929 until 1936, when global shipbuilding was still experiencing an extended slump following the Great Depression. The effect of the Great Depression on Dutch shipbuilding is a topic that has not previously been thoroughly explored academically. The main texts describing the shipbuilding business at the time were those written by the shipyards themselves.[3] This leaves a gap in the historiography concerning the Dutch shipbuilding industry which this thesis intends to fill.

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[1] Lewis Johnman and Hugh Murphy, "An Overview of the Economic and Social Effects of the Interwar Depression on Clydeside Shipbuilding Communities," *International Journal of Maritime History* 18, no. 1 (June 2006): 232, https://doi.org/10.1177/084387140601800112.

[2] Hugh Murphy, "'No Longer Competitive with Continental Shipbuilders:' British Shipbuilding and International Competition, 1930–1960," *International Journal of Maritime History* 25, no. 2 (December 2013): 59, https://doi.org/10.1177/084387141302500207.

[3] J.W.F. Werumeus Buning, *Veertig Jaar NSM* (Haarlem: Joh. Enschedé en zonen, 1934), 78-96; RDM, *Een halve eeuw 'Droogdok,' 1902-1952* (Rotterdam: N.V. Drukkerij M. Wyt en zonen, 1952), 91-142.

The twenties and thirties of the past century were a very different time from today, but, as we shall see, increased protectionism and strict financial regulations restricting government responses to crises are as much a modern topic as they were in the period under consideration.

In this thesis, I examine the period of 1929-1936. This period completely encapsulates the shipbuilding slump that starts with the Great Depression. The effects of the Great Depression only started to wane in the Netherlands when the government chose to abandon the Gold Standard, in 1936. The shipbuilding industry also started to recover as international trade had started to increase again around 1932 and the shipping industries started to catch up as well.

The topic that will be researched will be how the NSM managed to retain an international clientele, whilst other Dutch shipbuilding companies did not. Was it a technological edge, better use of institutional connections utilised by the leadership of the firm or something else?

Questions

The main question answered in this thesis will be: 'How did the NSM maintain its international competitiveness and outcompete the other Dutch shipbuilding companies during the decrease in number of orders caused by the Great Depression?' To answer this question, first a few other questions must be answered.

The question answered in the first chapter is: What were the effects of the Great Depression on Dutch shipbuilding? This question needs answering to explain why the NSM, exceptionally, was able to maintain a relatively high number of international orders. At the same time, answering the question leads to a clear historic positioning of the time period.

The research question for the second chapter is: Which customers ordered from shipbuilding companies in the Netherlands before and during the Great Depression? This question requires an answer because it will show which opportunities the NSM could exploit to remain solvent in the time of crisis.

The third chapter focuses on the question: Which types of ships did Dutch shipbuilders build, and how did they build them? The answer to this question will show whether the continued production of the NSM was due to a specific type of ship built, or due to a specific difference in their production-process. The interwar period was not merely a time of economic collapse, some sectors actually grew. This chapter will examine both the purposes of the ships built by the NSM compared to other companies, as well as the way in which they were built. These are the factors

that make a shipyard stand out in the shipbuilding market; we shall see whether these elements played a role in the NSM's relative success in this period.

The fourth chapter discusses the question: In what other ways could and did the NSM distinguish themselves? This question will show the NSM did not operate in a vacuum: there were more Dutch shipbuilding companies, many of which could cater to international orders. However, most of the others failed to do so in significant numbers. None of them came even remotely close to the number of ships built by the NSM. To answer this question, I will explore what set apart the NSM in areas such as company organisation, international profiling, and institutional connections. The answer to these questions will show what other creative ways the NSM used to acquire orders.

Theoretical Concepts

Competitiveness is the measure in which a firm manages to cater to specific demands of its customers better than another firm does. Tomasz Siudek analyses different theories of competitiveness,[4] concluding that competitiveness is dependent on a number of factors both within and outside a company's reach. He specifically mentions processes, performance, and network, which will be further evaluated in this research. Public spending and exchange rates are among the factors which Siudek mentions are outside a company's control, and these will also make an appearance in this research.[5]

Increasing competitiveness can be achieved by optimising the production of goods, making the same thing as the competitors but doing so cheaper, faster or making things of a higher quality. Additionally, it might be possible to be more competitive in a global market by gaining more name-recognition than your competitors. The significantly higher number of ships the NSM produced for international customers suggests it was more competitive than both its domestic and international competitors.

The interwar period will often be mentioned in this thesis. Though it is not entirely undisputed when this period begins and ends, the period referenced in this thesis will be the

[4] T. Siudek and A. Zawojska, "Competitiveness in the economic concepts, theories and empirical research," *Acta Scientiarum Polonorum. Oeconomia* 13, no. 1 (2014): 102, https://js.wne.sggw.pl/index.php/aspe/article/view/4110.
[5] Siudek and Zawojska, "Competitiveness," 102-103.

roughly twenty years starting with the signing of the treaty of Versailles in 1919 and ending with the German invasion of Poland in 1939. This period corresponds with the shipbuilding cycles previously mentioned, as well as with the most impactful period for shipbuilding. The Versailles treaty made clear what the post-war situation would be in which the shipbuilders could operate, and the German invasion of Poland was a clear end to the restoration of international trade.

Literature Report

After a brief bust in the early 1920's and a short recovery, the Great Depression heralded a sustained and significant contraction in demand for new ships worldwide, badly affecting the internationally oriented Dutch shipyards. Many of the shipyards had to resort to alternatives to foreign-placed orders, as there was little or no international demand for new ships. One firm however, the NSM, built over a dozen ships for foreign customers, compared to just seven from all other shipyards combined.[6] This discrepancy is a key area of interest of the present research, as existing research does not show how the NSM managed to attract these international contracts whilst other firms failed to do so. Present literature only shows the interwar was a bad period for shipbuilding, but does not examine the differences between individual shipyards.

In examining the edge the NSM held over other shipbuilding companies, various approaches are possible. The most important of these are the institutional and the technological approach. The institutional approach concerns the interwovenness of different political and societal institutions with shipbuilding firms, as well as any government intervention intended to influence the manner in which shipbuilding companies acquire their orders. The technological approach concerns the innovation and modernity of different shipyards. This approach seeks to explain the differences between different companies from a view of competitiveness, expecting the firm with the technologically superior or significantly cheaper ships and/or shipbuilding facilities to be more attractive to foreign shipping companies.[7]

This latter approach is investigated by Mila Davids, who makes it clear there was a significant decrease in orders during the crisis of the thirties. One of the relevant observations

[6] The Excess Insurance Company, *Lloyd's Register of Shipping 1936 Steamers & Motorships of 300 Tons Gross and Over* (London 1936), 5-1082.

[7] Mila Davids, *Knowledge circulation in the Netherlands. The co-evolution of the knowledge infrastructure and innovations in Dutch business in the 20th century: shipbuilding* (Utrecht: Eindhoven University of Technology, June 2004), 1-12.

and arguments that Davids makes is that before 1934, there was fairly little in the way of cooperation on design and related areas between different Dutch shipbuilding firms. This might be an indication of why some stayed more competitive than others during a low point in international shipping trade, as advantages that one shipyard had over another would not be shared with others.

Davids, in cooperation with Hans Schippers, has also written about competitiveness in relation to the Dutch shipbuilding industry, arguing that shipbuilding firms are often very dependent on cooperation and established connections with different groups of customers and experts.[8] They argue that innovation is a driving force behind competitiveness and that innovation is attained by means of 'interactions between institutional and organizational elements, which together we call "systems of innovation."' This approach takes innovation as a central concept, and argues innovation processes take time to develop, are path-dependent, meaning they change a lot depending on who performs them and how, and the systems are open-ended, meaning these processes do not have a clear end-point, rather leaving space for a divergence of difference outcomes.

This "Systems of Innovation"-approach could show a noteworthy difference between the NSM and other Dutch shipbuilding companies. The article by Davids and Schipper closely follows the line of thinking that Davids follows in her article mentioned earlier: that innovation in shipbuilding is essential to stay competitive. In the article written in collaboration with Schippers however, more emphasis is placed on different ways of innovating. Innovation does not merely mean the development of specific techniques, but also the way in which an organisation like a shipyard is organised, such as the way workers are hired.[9]

In his dissertation on the role of mayor De Vlugt of the city of Amsterdam, Harm Kaal mentions the role of the mayor in helping Amsterdam during the Crisis Years. For example, he helped the NSM to acquire new (international) contracts for ships from Leningrad (Saint Petersburg) during this period. The mayor of Amsterdam visited the Soviet Union, allowing him to help acquire orders for the Dutch shipping firm, which he was formally representing. Officially

[8] M. Davids and H. Schippers, "Innovations in Dutch Shipbuilding: A Systems of Innovation Approach," *Business and Economic History On-Line* 1, no. 1 (2003): 1-4, https://thebhc.org/sites/default/files/Davids_0.pdf.
[9] Davids and Schippers, "Innovations in Dutch shipbuilding," 1-3.

this was because the NSM director himself was indisposed, but it is not unthinkable it had to do with the implications of sending a government official to a country that found itself internationally isolated. In this way, the mayor's travels can be construed as a way in which institutional and organisational actors work together to achieve progress for their shared interests. The people of the city of Amsterdam profited from this cooperation by keeping their jobs.[10]

The research of Kaal differs fundamentally from the research of Davids and Schippers, as the approach to competitiveness from Davids and Schipper is one primarily based on innovativeness, whereas the argument that Kaal provides is one of institutional involvement in private business. Kaal's approach, therefore, complements Davids' research on innovation. Cooperation figures prominently in both of their accounts of the period, but where Davids and Schipper argue that what gives a firm an edge over its rivals is the way it operates and innovates Kaal seems to suggest it is useful for firms to be politically connected to acquire an edge in the market. The political bond helped the NSM staying afloat in an international market that other Dutch shipbuilding companies could no longer access. It is therefore interesting to compare and contrast how the government interacted with the NSM to the way they interacted with the other Dutch shipbuilding companies in the interwar period.

Dutch-focused research into this topic is rather sparse. Dutch shipbuilding in the interwar period has not been researched much, and there is very little literature on the Dutch shipbuilding industry. In comparison, British shipbuilding in the interwar period has been far more thoroughly documented. As with the Dutch case, British shipbuilding took a hit after the Great Depression. The British and Dutch shipbuilding industries are comparable, as both were internationally oriented, in states with a significant seafaring heritage, and in neither country shipbuilding sectors had been harmed too much by the First World War. This means that, a comparison between the two countries might be helpful.

In the British case, Edward Lorenz emphasises other reasons for the lack of competitiveness than Davids and Schippers. He argues that the British decline in competitiveness was due to the lack of standardisation. The British shipyards were delivering well-crafted and

[10] H. Kaal, "Het Hoofd van de Stad" (PhD diss., De Vrije Universiteit, February 2008), 129-174.

individually designed ships, meeting specific needs of the ordering party. By contrast, Lorenz argues, other producers, like the Dutch, as well as the Swedish, had a more standardised approach to shipbuilding, allowing them to remain more competitive. Standardised ships were easier and cheaper to build as it was possible for companies to tailor their shipyards specifically to the building of these ships.[11]

It is interesting that Lorenz considers the Dutch as one of the states that remain more internationally competitive, considering the decline in international orders experienced by most Dutch shipbuilding firms. The Dutch share of the international market stayed relatively high compared to the British share, which decreased by a lot, whereas Dutch firms built fewer tons of ships for the international market after the Great Depression. As the entire world market was contracting, this meant it was possible for Dutch shipbuilders to retain a relatively high percentage of the world market for ships, even though the absolute tonnage of ships constructed decreased. The NSM did build a majority of that tonnage, meaning the firm compensated for the reduction in international orders for other Dutch shipyards.

Similar is the account of Hugh Murphy, which indicates that European shipbuilders became more and more competitive compared with British shipbuilding. Murphy shows that lower production costs allowed continental shipbuilders to produce ships cheaper and faster than British shipbuilders. However, he also details how this greater competitiveness was due to economic nationalism. He does not specify what this economic nationalism entails, but other authors do. Lorenz writes that many continental states subsidised their shipping firms, indirectly subsidising their shipbuilding companies. It is also possible that the institutional involvement hinted at in the writing by Kaal details a similar economic protectionism, promoting Dutch business interests by lending political legitimacy to the shipbuilding companies they represented.[12]

Another point Murphy describes is one that shows similarities, rather than differences, between the British and the Dutch cases. Murphy argues that the large diversity in British

[11] Edward H. Lorenz, "An Evolutionary Explanation for Competitive Decline: The British Shipbuilding Industry, 1890–1970," *The Journal of Economic History* 51, no. 4 (December 1991): 911–935, https://www.jstor.org/stable/2123398.
[12] Hugh Murphy, "No Longer Competitive," 35–60.

shipbuilding companies was detrimental to their international trading position, as different firms only cooperated on labour matters, never on shipbuilding matters, decreasing the efficiency of the industry as a whole. This situation, with different firms competing for orders rather than working together to pool their resources, is similar to the situation in the Netherlands, where different firms also had to compete for international orders. The British solution was for the shipbuilding companies to work together and, combining their resources, secure a way to eliminate rivalry between the different companies. This is not something many Dutch shipbuilding companies did, but it is interesting to examine to what extent the Dutch shipbuilding firms did work together.

An additional reason why the Dutch shipbuilding industry failed to maintain incoming international orders is given by Barry Eichengreen and Douglas Irwin. They examine the particularities of countries and their actions regarding the Gold Standard.[13] They argue that maintaining the Gold Standard was one of the crucial factors in imposing protectionist trade barriers such as tariffs. They argue that it was one of the few crude ways in which governments were able to keep companies in their own country solvent, whereas countries that abandoned the Gold Standard had fewer reasons to resort to tariffs, as their economies were more flexible. In both cases clear examples are present of states to which these conditions applied: Germany imposed tariffs, and Dutch shipbuilding for German shipping companies decreased markedly during the Great Depression.[14] Norway abandoned the Gold Standard, indicating its more international orientation. This is reflected in the Norwegian orders at the NSM. Interestingly, the Dutch response to the international slump was to hold on to the Gold Standard, possibly explaining the dearth in international orders for most shipbuilding companies as well, as it increased relative costs for Dutch shipbuilders.

The Norwegian response to the decrease in international shipping is particularly interesting, as the vast majority of international orders of the NSM during the Great Depression came from Norway.[15] The analysis of Stig Tenold and Camilla Brautaset of Norwegian shipping

[13] Barry Eichengreen and Douglas Irwin, "The slide to Protectionism in the Great Depression: Who Succumbed and Why?," *National Bureau of Economic Research* 70, no. 4 (February 2010): 871-874, https://doi.org/10.1017/S0022050710000756.
[14] The Excess Insurance Company, *Lloyd's*, 5-1082.
[15] Buning, *Veertig Jaar NSM*, 85-92.

from 1850-2000 gives a good indication of what happened in the interwar period that made the Norwegian shipping companies order more ships internationally than other states' shipping companies did.[16] They argue that the Norwegian shipping companies catered to demand by having many modern tanker ships in their arsenal. These were in high demand, whilst demand for other types of shipping declined. Norwegian shipping companies managed to correctly foresee structural changes to global trade, which made them able to more aptly respond to the new demands of the market. This explains why Norwegian shipping companies ordered ships in different states as well: they had found a segment of the market in which a rise in demand, rather than a decline, was taking place, enabling them to order ships internationally to fulfil that demand.

The Norwegian case is relevant because it offers an indication of why the one Dutch shipbuilding company that managed to attract foreign orders attracted many Norwegian ones. Norwegian shipbuilding companies, according to Stig Tenold, found an opening in the world shipbuilding market in the middle 1920's by starting to build tankers for international oil companies, who habitually outsourced their shipping to foreign companies.[17] Consequently, the Norwegian tanker fleet grew exponentially in the interwar period. This increase in building tankers led to a corresponding increase in shipping companies using tankers. These companies required new ships, outpacing Norwegian shipbuilding capacity. Therefore, they ordered internationally. These are the sparse international orders for ships the NSM delivered most often. Still, a question remains to be answered: Why was it the NSM, and not another shipbuilding company, that received these orders?

Whilst the Norwegian increase in total tonnage was largely reliant on accessing the market for tankers, the British shipping in coal, which amounted for a large proportion of British exports, was largely on the decline for the entire interwar period. Jan Tore Klovland argues that the Great Depression was not a normal recession in the sense that it not only laid waste to

[16] Stig Tenold and Camilla Brautaset, "Globalisation and Norwegian Shipping Policy, 1850–2000," *Business History* 50, no. 5 (5 August 2008): 565–582, https://doi.org/10.1080/00076790802245949.
[17] Stig Tenold, "Crisis? What Crisis? Norwegian Shipping in the Interwar Period," in *Norwegian Shipping in the 20th Century*, ed. Stig Tenold (London: Palgrave, 2018), 91–131.

shipping, but that it was a far more sustained decrease.[18] British coal shipping did not recover until 1936, four years after the rest of the world economy had started growing again. In part this can be explained by the increasing obsolescence of coal shipping in a global economy increasingly dependent on oil. It also, however, illustrates that there were plenty of sectors where the crisis did not present opportunities. The decrease in demand for coal-ferrying can be viewed as one of the explanations for the decrease in foreign orders for Dutch-built ships in the interwar period.[19]

Another clear reason for the decrease in international orders for Dutch shipbuilding companies is the decrease in international trade due to rising costs. When the cost of trade increases, the ordering of new material is often put off until it becomes more profitable. The increase in the cost of international trade is clearly documented by David Jacks, Christopher Meissner and Dennis Novy. Their data-driven approach to analysing international trade in the interwar period indicates that due to protectionist barriers, the costs of international trade skyrocketed following the first years of the Great Depression. They add that tariffs are far from the only factor increasing the cost of trade, and aim with their article to start detailing nontariff ways of protectionism, as well as institutional and informal ways of protectionism and the way such measures influenced the cost of international trade.[20]

'Protectionist measures' is often be used as a rather vague concept, so clarification is in order. In this thesis, the term refers to all actions protecting domestic industries at the expense of foreign imports. This means that protectionism entails both overt measures, such as imposing tariffs and taxes on specific goods to prevent them from competing with domestically produced goods, as well as less overt measures, such as government officials promoting goods that are made domestically over similar goods from other states, or awarding contracts merely to domestic companies, though, depending on the transparency of the process, that might very well be considered overt protectionism. These measures will, in this thesis, often be considered under the label of 'protectionist measures', as they are all ways in which a state can protect its own industries against foreign competition.

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[18] Jan Tore Klovland, *Shipping in Dire Straits: New Evidence on Trends and Cycles in Coal Freights from Britain, 1919-1939* (Bergen: Norwegian School of Economics, March 2016), 1-2.
[19] Klovland, *Dire Straits,* 9-12.
[20] David S. Jacks, Christopher M. Meissner, and Dennis Novy, "Trade Costs, 1870-2000," *The American Economic Review* 98, no. 2 (May 2008): 529–534, https://www.jstor.org/stable/29730076.

Protectionism plays a role in many different ways. For instance, already in 1937, Hobart S. Perry attributed the decrease in US shipping during the interwar period to protectionist actions of other states' governments. It is interesting to see the markedly optimistic tone of his article, commenting that, despite losing about half of their customer base, US shipping had increased its share of international shipping in the thirties. He also hints at another reason of why demand for new ships declined during the Great Depression: A decrease in passengers for passenger travel limited the demand for ships from shipping companies that relied on cross-ocean travel of civilians. A decrease like this is to be expected during an economic downturn, but nevertheless is another example why orders from international shipping companies for Dutch shipyards largely ceased in this period.[21]

The United States itself did not shy away from protectionist actions. The decline in Dutch yards building for foreign shipping companies can be partly explained by the fact that after the Great Depression, the US government began promoting more domestic shipbuilding, leading to a quadrupling of the American merchant navy in tonnage between 1914 and 1939. This is not an explanation for the decline in orders for Dutch shipbuilding companies in itself, but where US shipping companies had been one of the groups that previously had been placing orders in the Netherlands, the US now switched to more domestic shipbuilding. This might be indicative of a trend that undermined the solvency of Dutch shipbuilding companies, formerly heavily reliant on international orders, including from the US.[22]

In a similar vein, Buning, in *40 Jaar NSM*[23] points to an increase of Dutch government orders for Dutch shipyards after the initial years of the Great Depression, indicating that the US government was not the only government attempting to save the domestic industry by making it less reliant on foreign companies. In the US case, this resulted in a larger domestic industry for shipbuilding. The effect was a decrease in foreign orders for Dutch ships, meaning the Dutch government had to place orders to keep the Dutch shipbuilding afloat. Given that this was an internationally turbulent time, they had plenty of reason to do so, for example for the navy. These

[21] Hobart S. Perry, "The United States Shipping Industry," *The Annals of the American Academy of Political and Social Science* 193, no. 1 (1937): 88–98, https://doi.org/10.1177/000271623719300110.
[22] John G.B. Hutchins, "The American Shipping Industry since 1914," *The Business History Review* 28, no. 2 (June 1954): 105–127, https://www.jstor.org/stable/3111487.
[23] Buning, *40 Jaar NSM,* 85-92.

ships, however, are not the primary subject of this research, as it focusses on commercial performance of shipyards.

The different authors discussed so far all agree that the international character of global trade changed in the interwar period, and they give different explanations: They all agree that protectionist measures by different states adversely impacted the shipping industries of countries that were heavily reliant on international trade. Their explanations are in places complementary, and contradictory in other places. Many authors quote tariffs as an explanation for the decrease in global demand for shipping, and therefore, shipbuilding. Others also ascribe the decrease in international shipping to other factors, such as an increase in the cost of international trade, and other protectionist measures, such as a shift away from foreign-built ships to domestically manufactured ones. This shift took place in the Netherlands in reverse: shifting away from building ships for foreign shipping companies to building ships for domestic customers. In this regard, this trend is interesting because it affected both states that saw domestic shipbuilding for domestic customers as a potential for growth, and states that saw it as a necessary measure for an otherwise shrinking industry.

In their article on tramp shipping (shipping without schedule and/or standard ports of call) Saif Mohammed and Jeffrey Williamson talk about a policy-induced de-globalisation.[24] This argument is similar to those made by previous authors, who also claim that protectionist measures by states' governments were clear contributors to the loss of international trade, but Mohammed and Williamson go further, stating that protectionist policies were the basis for this loss. This meant that, even when protectionist measures did not directly seem to impact one sector or one country in particular, this de-globalisation still had a severe knock-on effect on global trade, and on other sectors.

Innovative Aspects

Different researchers have given varying reasons for what happened in the interwar period. In this thesis, the differences between Dutch shipbuilding companies, which were hinted at in the

[24] Saif I. Mohammed and Jeffrey Williamson, "Freight Rates and Productivity Gains in British Tramp Shipping 1869-1950," *Explorations in Economic Research* 41, no. 2 (2003): 172-203, https://doi.org/10.1016/S0014-4983(03)00043-3.

articles by Kaal, Davids and Schipper, will be further explored.[25] This thesis thus will fill a gap in academic writing on this topic.

Switching from the supply to the demand side of shipbuilding, this thesis will also attempt to find out why Norwegian – and other – shipping companies chose the NSM over other Dutch shipbuilding firms, explaining why, though there were twenty ships built for non-Dutch customers, more than half of these were built by only one shipyard. Especially crucial in this part of the research will be the writing of Stig Tenold on the Norwegian shipping industries and the Norwegian merchant navy.[26]

The explanation for the relative success of only one shipyard will also be explored through the manner in which it dealt with increasing barriers to international trade and its effects on the shipping and therefore the shipbuilding industry. In this way this research joins the studies by the different authors examining the ways in which the Great Depression decreased global trade and the way in which different states reacted to this phenomenon.

In the literature discussed above, the shipbuilding industry in the Netherlands is sorely lacking. It is unclear how this industry survived the Depression and it is unclear how the Depression had an impact on what kind, size or type of ships were built. The most thorough review of interwar shipbuilding in the context of the Great Depression and the opportunities it provided, in addition to the negative consequences it had, concerns the Norwegian case.[27] The Norwegian shipping growth in the interwar period was partially dependent on foreign shipyards capable of building specific ships, meaning the Norwegian case is linked to Dutch shipbuilding and begging the question why only one of the Dutch shipyards managed to serve these new customers.

This research will also explore the limits of increased competitiveness of a company. The Crisis Years were a tough time for shipyards, and even the NSM, as the largest Dutch shipyard, had to cut back on personnel and other costs during this time. The NSM managed to attain orders

[25] Kaal, "Hoofd van de Stad," 129-174; Davids and Schipper, "Innovations in Dutch Shipbuilding," 1-4.
[26] Tenold, "Crisis? What Crisis?," 91-131.
[27] Tenold, "Crisis? What Crisis?," 91-131; Tenold and Brautaset, "Globalisation," 565-582; Lorenz, "Competitive Decline," 911-935.

whilst other shipyards did not, but in researching these issues, the idea that attaining orders meant that no negative consequences of the crisis were experienced, proved to be wrong.

There are different studies, like the ones by Davids mentioned earlier, that pay attention to innovations in shipbuilding and how shipbuilders implemented these innovations. Davids also looks at whether shipbuilding companies were at the forefront of innovation or merely adopters of existing technology. This present research will go into detail where other studies have not, and indicate what effects adopting innovations might have had to explain the difference between the performance of different companies.

Sources

The sources used are the archives of three different shipbuilding companies, the NSM, Rotterdamsche Droogdok Maatschappij (RDM), and Wilton-Feijenoord. I will examine the building lists of the different companies, in order to find out which different companies ordered ships from Dutch yards. These will be cross-referenced with the Lloyd's register to get a complete overview of numbers and types of ships built. This process will reveal which ships that were laid up were also taken into use and delivered to the relevant shipping companies. Specifically, the yearly (financial) reports, written by the board addressing the shareholders of the different companies, will be used to illustrate the different positions of the shipbuilding companies. There are, of course, remarks to be made about these sources. The primary reason for using the yearly reports is that they are a valuable insight into how shipyards performed, with a consistent frequency of publishing, and high availability. The downside of the use of these yearly reports is their intended audience. The board of a company had an incentive to present a positive outlook to their shareholders when times were tough on account of potential divestment. As long as a company appears healthy, investors treat this company as healthy. This means that the company in question has the potential to stay in business, in spite of disappointing results. Nowadays, there are regulations governing the way a company presents its yearly results, but at the time of the publication of these reports, these were not yet established, accounting for certain oddities in the reports.

Nevertheless, the reports are a valuable source of information, as they are readily available and provide a continuous look into how the different companies were performing at the time. The incongruencies in the bookkeeping by the boards of the different companies can

be accounted for by not taking the yearly reports as a source at face value, but by comparing the trends visible in the yearly reports of succesive years. If the depreciation of the company's assets wildly fluctuates between good and bad years, that is a clear indication that the company's board is trying to make the situation seem better than it is. The potential pitfalls of using the yearly reports are largely avoided by looking at the situation not just during the Great Depression, but before the Depression as well, so as to have a control group to see the potential discrepancies in the reports. This way, the reports, although not wholly trustworthy at face value, can still be used. The reports contain information on the types of ships that were built, as well as for which customers these were built.

For both the NSM and the RDM, commemorative books were written when their respective companies existed for 40 and 50 years. These books will be used to examine the positions that the owners of the shipyards themselves held when reviewing the meagre years, which their companies had survived. These accounts will be biased, and bear a top-down view of the circumstances at a shipyard, as they were written at the behest of those controlling the companies. Yet, their relevance to this research must not be discounted, as the owners did experience the Crisis Years and the dearth of work is mentioned in both of the commemorative books.[28] These books help establish a picture of how the shipyards were performing in a difficult time.

In addition to the reports issued by the shipbuilding companies themselves, this research will use newspaper articles about the solvability of the shipyards, reflecting the public perception of the shipyards and their activities. The shipyards business in time of crisis was often topic of interest in the papers. Where the yearly reports have an incentive to publish positive results, newspaper articles can be a useful addition as a more impartial source of judgement on the shipyards' solvability. Therefore, they will be used to supplement the view provided by the yearly reports.

Methodology

In this thesis, the NSM and internationally less successful competitors will be compared to find out what it was that made the NSM so much more successful than its domestic competitors in

[28] Bruning, *40 Jaar NSM*, 78-82; RDM, *Droogdok,* 91-142.

managing to acquire orders from non-Dutch shipping companies, especially of those in Norway. In the period from 1932-1935, Wilton-Fijenoord built three ships for shipping companies that were not from the Netherlands themselves, whilst the NSM in the same period built thirteen. Other shipyards did not produce nearly as many ships as the NSM did in this period, which begs the question 'Why did the NSM manage to build so many more ships than any of the other shipyards did?' The NSM will be one of the shipyards that are researched, as the primary focus of this research. The other two shipyards that will receive the most attention are the Rotterdam-based RDM and Wilton-Fijenoord. They built a similar number of ships to the NSM, of similar sizes.

This question will be answered primarily by examining the reports of the shipyards themselves, in which they explain what the results of the past years were and how the yards are doing. In addition, the Lloyd's register will be used to see which shipyards built ships for which (foreign) clients. The size of the ships can be found there as well as some of their specifications. These data can help in deciding for what purpose different ships were built. Other sources, such as the websites of volunteers detailing their previous places of work will be used as well, to collect images of the ships that are relevant to this research.

The yearly reports written by the shipyards will be used to examine the way the shipyards were performing in very real, financial terms, allowing for the analysis of the trends the yards were part of. If a shipyard performed far better before the Depression in comparison to during the Depression, that is a clear indication the shipyard was affected, even in the potential absence of figures of employment and the like concerning that shipyard. The shipyards' yearly reports are indicative of how the company board saw the company's performance as well. The yearly reports provide this research with details concerning the types of ships built, as well as the customers they were built for. They also provide an insight into the financial health of different shipbuilding companies.

A distinction will be made in this research between ships built for commercial customers and ships built for (domestic) military customers. Although all larger Dutch shipyards at the time built military vessels, these ships were only ordered in very small numbers. They are also harder to quantify, as they do not appear in the primary source used for matching shipyards to ships

built, Lloyd's Register.[29] With regards to the NSM and its business practices, the Amsterdam city archive is an invaluable addition to source material. Most specifically, the city archive documents the decision-making process of the Amsterdam city council with regards to a few key decisions surrounding the NSM's acquisition of orders. This will help answer the question about other ways in which shipyards distinguished themselves, apart from customers and construction.

[29] The Excess Insurance Company, *Lloyd's*, 5-1082.

2. What were the effects of the Great Depression on the shipbuilding industry?

During the 1920's, economies all around the world experienced an upturn that started to overcome the negative effects that the First World War had had on global trade. However, the improving economic situation in this period masked negative tendencies that were part of the economic climate. For instance, in the agricultural sector, particularly in the USA, prices were low, and profit margins were small. This in turn meant that agricultural enterprises could ill-afford the products of the industrial sector, leading to decreased profitability in that sector as well.

In addition, many of the post-war governments of Europe were in significant debt due to the Great War. As long as the global economy was plodding along, there was a willingness of banks and other countries to loan these states money to pay off their debts. Paying debt with more debt is not a sustainable economic model, however, and, in 1929, the fragile market was confronted with the bursting of a financial bubble, as the American stock market collapsed. The collapse of the stock market in the USA was the direct cause for many banks to stop lending people the money they had previously used to buy stocks. Additionally, the banks came to collect their money, which people no longer had, causing many people to have to default on their debt or sell whatever they had.

When countries trying to pay off their debts with new debts could no longer borrow money, drastic action had to be taken. Banks in Germany and Austria started to collapse under the weight of loans which they could no longer collect, and orders from these countries to other countries were suspended. As the British pound was the international currency of choice in this time, the British economy suffered from the effects of suspension of trade in these regions. British banks could no longer collect debts they were due and started to suffer from a lack of currency, meaning they could also no longer cover their own debts in pounds. People asking gold for their pounds were soon demanding so much that the Bank of England had to suspend convertibility of pounds to gold, and thus, the Great Depression had crossed the Atlantic and entered Europe.[30]

Eventually, many states resorted to tariffs, trade controls and the limiting of exchanges. In addition, states started to abandon the Gold Standard, the monetary policy of the time that prevented many crisis-alleviating measures, starting with Great Britain in 1931. This meant that

[30] Eichengreen and Irwin, "Protectionism," 875-880.

they would be able to devalue their currency, making trading in pounds more interesting for economic actors from other states, whilst at the same time, making their exports cheaper, and imports more expensive. This meant an increase of domestic consumption of domestic goods, and increased exports. As a result, many industries saw the strain of the Great Depression start to alleviate. This measure, of abandoning the Gold Standard, was only taken, however, after the impact of the Great Depression had been felt for a few years. Most countries did eventually abandon the Gold Standard, but the moment this was done differs for different countries. Great Britain and Norway were amongst the first countries to let go of the Gold Standard, whereas the Netherlands, Belgium and France were the last countries in Western Europe to do so, in 1935 and 1936. This meant recovery from the Depression was slower in the Netherlands than in other countries.[31]

The Dutch government sought to combat the crisis by supporting Dutch businesses and restricting cheaper imports as much as possible.[32] However, the Dutch economy had been oriented on exports for a long time and the collapse of demand for Dutch agricultural goods from Great Britain for example led to a significant decrease in prices for groceries, which adversely affected the agricultural sector by turning profits into losses.[33] As the Dutch government started to intervene, deflating the gulden to maintain profitability for Dutch farmers, the dairy sector was hit by higher prices for goods they required to feed their livestock. Other measures taken to benefit one sector often had knock-on effects on other sectors, requiring a continuing range of measures taken by the government.

After prices had started to decrease, demand started to decrease as well, meaning the export-oriented Dutch industry could no longer sell what they produced, and the fall of the pound in this time made their position even less tenable. Imports from the sterling area became significantly cheaper compared to Dutch domestic production, leading the government to take unprecedented action, limiting imports of certain goods to small amounts. As other states took

[31] J.L. van Zanden, R.T. Griffiths, *Economische Geschiedenis van Nederland in de 20e eeuw. Van een veelzijdige volkshuishouding met een omvangrijk koloniaal bezit naar een 'klein land' binnen Europa* (Utrecht: Het Spectrum, 1989), 140-163.

[32] F.A.G. Keesing, *De conjuncturele ontwikkeling van Nederland en de evolutie van de economische overheidspolitiek 1918-1939* (Nijmegen: Socialistische Uitgeverij, 1978), 180-219.

[33] Keesing, *Economische Overheidspolitiek,* 180-219.

similar measures against Dutch exports, the government had to act to make sure those exports that were allowed were spread reasonably between different producers.[34]

The effects of the Crisis Years on the Dutch economy are clear to see when examining Dutch GDP before and during the Depression. After a short period of decreasing productivity, the Dutch GDP rose from the equivalent of 2.4 billion euros in 1923, to a peak of almost 3 billion euros in 1929. During the Crisis Years, Dutch production value nosedived, with GDP reaching a low point of just over 2.2 billion euros in 1935, and only then starting to recover.[35] In total, from 1929-1935, the Dutch GDP fell by over a quarter.

The decrease in profitability that was experienced in different sectors affected wages as well. Whilst the decrease in prices in a lot of areas did temporarily increase the spending power of factory workers during the beginning of the depression (as their pays stayed the same whilst prices dropped) decreases in wages in the following years effectively eliminated these gains. The Dutch government, in attempting to minimise government debt, cut spending tremendously and tried to keep lowering prices and wages to keep the Dutch economy internationally competitive. These attempts were mostly futile, as the high value of the gulden severely decreased the manoeuvring room of the government. Combining the lack of effectiveness of the measures the government did take with their reluctance to abandon the Gold Standard, the Dutch economic recovery was very slow, only reaching the pre-crisis highs again after the Second World War.

The Dutch government did not use the same methods used by other states for quite some time. The Gold Standard was maintained and only measures in line with the Gold Standard, like lowering wages and prices, were taken to counteract the relative rise in value that the Dutch currency was experiencing. These measures, however, were insufficient to solve the larger problems faced by the Dutch economy. Despite the measures undertaken by the Colijn government, relative wages and prices both rose sharply as other states started to devalue their currencies. Between 1930 and 1935, the year before the Dutch government abandoned the Gold Standard, the Gulden increased in value relative to other currencies by about 80 percentage

[34] Ibid., 180-219.
[35] Centraal Bureau voor Statistiek, "Nationale rekeningen; historie 1900-2012" (26-06-2014), accessed June 26, 2023, https://opendata.cbs.nl/statline/#/CBS/nl/dataset/7343nr/table?dl=5043.

points, whilst both relative wages and prices rose by about 40 percentage points.[36] In the same period, unemployment rose from about 4% to 12%, and although by this time 12% unemployment was still lower than the United States' 14%, the USA had been on a downward trend in unemployment for about four years, whilst unemployment in the Netherlands did not substantially decrease in the pre-war years.[37]

This was the situation in the Netherlands at this time. The Dutch economy, oriented on international trade, started to take hits when international trade started to dry up, as different states imposed trade barriers and other protective measures. The Dutch government did not abandon the Gold Standard, meaning that it had no capabilities to make Dutch products more attractive to international customers. After all, because the Dutch currency had not been devalued, it was relatively expensive to buy guldens, making it expensive to buy Dutch products. In tandem with this, Dutch labour was more expensive than foreign labour, as the Dutch currency was more expensive compared to other currencies. In all, this meant Dutch companies were far less competitive than their foreign competitors, requiring higher prices than other, foreign companies. The Dutch government's reluctance to abandon the Gold Standard was due to the perceived security that the Gold Standard offered the Dutch economy and its access to global trading networks. The easy convertibility between different currencies on the Gold Standard would facilitate the flow of international trade according to this line of thinking. This would only hold, however, as long as there were other states also maintaining the Gold Standard with whom would trade. Additionally, abandoning the Gold Standard was an unknown measure. The Colijn government was hesitant to take a leap of faith like that, not knowing what its consequences would be. This vacillating on the part of the government, not taking the measure that was on many people's minds, was splitting many parties and the Dutch government fell in 1935 over the question of devaluation. The new government, consisting of the same parties as the old government, did not however commit to abandoning the Gold Standard immediately. This was an important factor in the slow Dutch economic recovery compared to other countries.[38]

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[36] J.L. van Zanden, "Nederland in het Interbellum," *Economisch-Statistische Berichten* no. 73 (1988): 176.
[37] Van Zanden, 'Nederland in het Interbellum,' 177.
[38] Ben Bernanke and Harold James, "The Gold Standard, Deflation, and Financial Crisis in the Great Depression: An International Comparison," in *Financial Markets and Financial Crises,* ed. R. Glenn Hubard (Chicago: University of Chicago Press, 1991), 33-68.

This was devastating for industries that depended on exports; the shipbuilding industry was one of them. Shipbuilding was heavily reliant on foreign currencies when serving foreign customers, specifically the pound, as contracts with foreign customers would be paid for in the local currencies.[39] This was because the shipping industry was largely reliant on the pound for contracts. Most Dutch shipyards participated in both building new and repairing existing ships, which was useful in this case, as ship-repair was necessary to keep ships afloat, especially as shipping companies kept their ships sailing longer as a means to postpone large investments in new ships. Thus shipbuilding was not very profitable during this time, as was stated by the board of the NSM in this time:

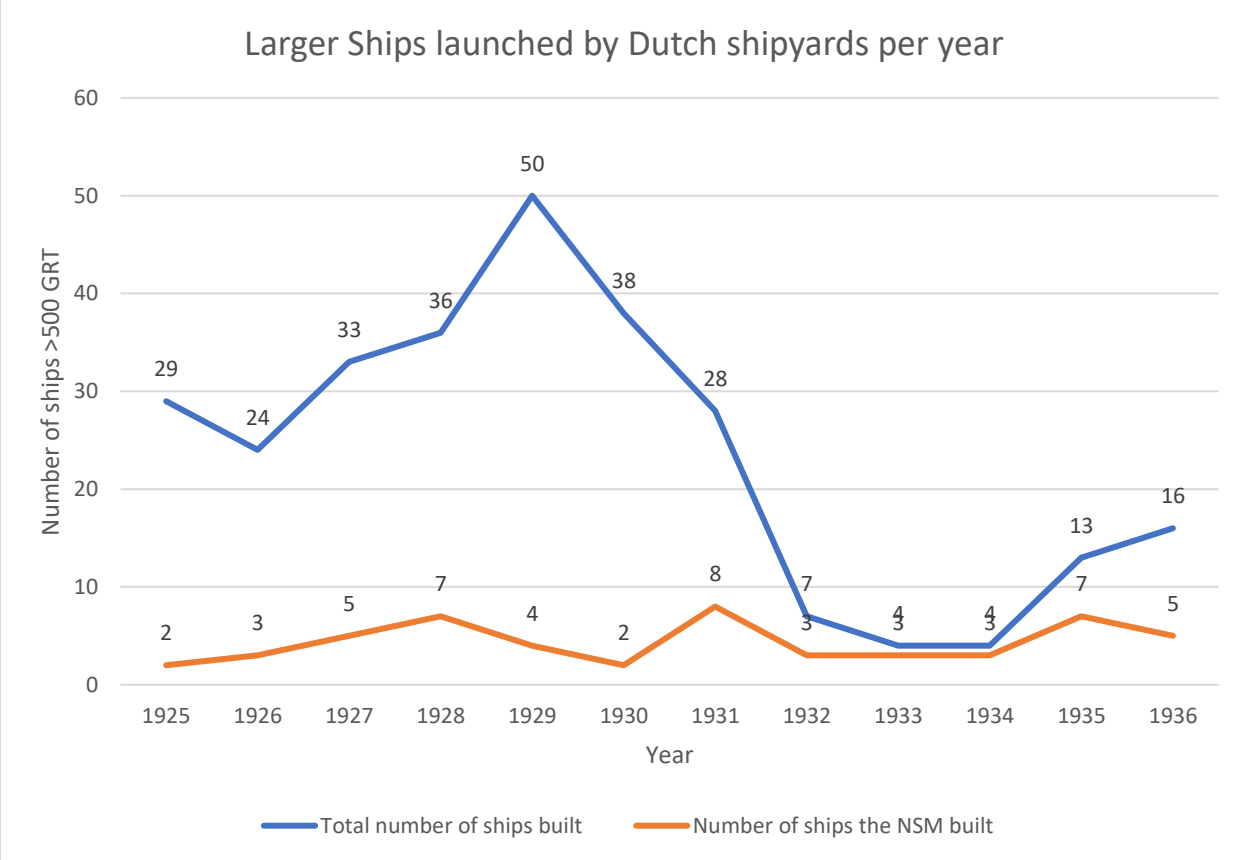
> For a shipyard like ours, which exclusively builds ships and does not perform repair work, the negotiable price is decided by the price on the world markets. The countries that are dedicated to shipbuilding, all have currencies that have been devalued by more than 40%. We cannot fully adjust to this, unless all of our costs were cut by the same margin. This is far from the case. Many of our costs remain unchanged and deliveries, which we have to order from protected companies, are insufficiently cheaper. If the process of adjusting does not soon succeed, the Netherlands will have to reduce its shipbuilding industry to a minimum.[40]

The effects of the Great Depression on Dutch shipbuilding were multiple, and most of them very severe. The different shipyards managed to build an average of 34 larger (over 500 Gross Register Tons) ships a year in the period 1925-1931, (amounting to a total of 238 ships) as shown in graph 2.1, which is based on the Lloyd's register of shipping in these years.[41] This dropped to lows of just 4 ships built over 500 Gross Register Tons in 1933 and 1934. It is interesting to see that the numbers of ships built in 1929, 1930 and 1931 are still relatively similar to the pre-crisis numbers, although a steady decline can be seen. The delay in the drop to single

[39] Stadsarchief Amsterdam, 30300 Archief van de Nederlandsche Dok- en Scheepsbouw Maatschappij, 335 Nederlandsche Scheepsbouw Maatschappij NV, Financiële jaarverslagen van de Nederlandsche Scheepsbouw Maatschappij, 1931-1944.
[40] Stadsarchief Amsterdam, Financiële Jaarverslagen.
[41] The Excess Insurance Company, *Lloyd's*, 5-1082.

digits of ships built yearly can be explained by the time it takes to build a ship. Although the crisis started in 1929, shipyards were still receiving orders up to that point.[42] Therefore, in the first few years of the crisis, shipyards were still largely occupied and busy fulfilling orders. It is only after the onset of the Great Depression that the orders stopped coming in, leading to idle wharves and a decrease in output from the shipyards.

The 44 ships built between 1932 and 1936 were built by a few different shipyards, as set out in table 2.3 below.[43] What immediately stands out, is that the production by the NSM had not been cut down to as low numbers as the production by different other companies that it previously competed with. In some years during the Depression, more than 75% of tons of ships



2.1 *Ships larger than 500 GRT built per year by Dutch Shipyards*

Source: Own calculations based on: The Excess Insurance Company, *Lloyd's Register of Shipping 1936 Steamers & Motorships of 300 Tons Gross and Over* (London 1936), 5-1082.

[42] Stadsarchief Amsterdam, Financiële Jaarverslagen; Rotterdamsche Droogdok Maatschappij, "Jaarverslagen van de RDM," 2017, accessed December 14, 2020, https://www.rdm-archief.nl/jaarverslagen-van-de-rdm/.
[43] The Excess Insurance Company, *Lloyd's*, 5-1082.

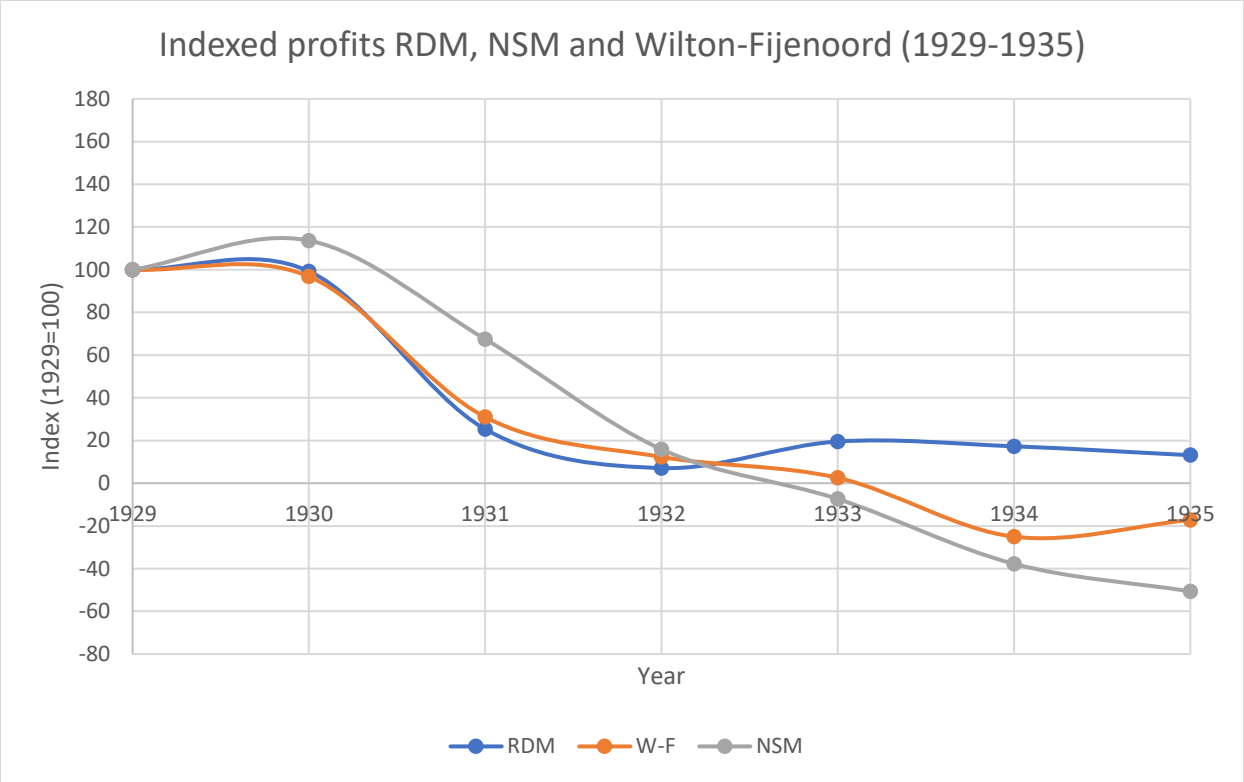
built in the Netherlands could be attributed to the NSM. Despite this, their yearly reports indicate the NSM was suffering badly from the Depression. This indicates that the quantity of ships built was not the most important measure of success for a shipyard in this period. For instance, in the report for 1931, the company leadership wrote that the yards at least would be occupied at least until late into 1933, but the report also mentioned that the contracts the company entered into, specifically those with shipping companies outside the Netherlands, were not satisfactory in terms of revenue.[44] This was due to the abandonment of the Gold Standard by countries like the United Kingdom, which made contracts at a set price in pounds less valuable, as the British government devalued the pound after they abandoned the Gold Standard, whilst the Dutch government did not do so until a few years later. Because of this, it became less profitable for Dutch shipbuilding companies to build ships for foreign shipping companies, as Dutch production was relatively expensive, and foreign shipping companies were looking to save costs when ordering ships. The international currency of the age, the pound, was less stable, meaning that the value of an order was often significantly lower at the tail-end of the building of a new ship than it was when it was first ordered.[45]

Not only did international orders received before the devaluing of foreign currencies significantly drop in value, the orders that could be attained afterwards were not always lucrative either. The importance of establishing and strengthening relations with foreign shipping companies was given by the board as reason enough to take on these orders, whilst other explanations may be sought in the fact that the NSM did not want its yards to go idle for any extended period of time, as an unprofitable order was still better than no orders at all.[46] After all, a certain number of employees would still need to be paid if the yards were idle. Keeping these employees working on new ships, meant their labour was at least partially paid for using the revenue that the newly built ships generated. The reports covering the years 1932 and 1933 show that the profits the NSM made at this time were drastically going down during this period as well, with a gross profit of over 300,000 guldens in 1931, only 80,000 in 1932 and a loss of 70,000 guldens in 1933. The company coped with these losses by dipping into its reserves, as well as

[44] Stadsarchief Amsterdam, Financiële Jaarverslagen.
[45] Ibid.
[46] Ibid.

tapping into a fund designated for expansion of the shipyard. The following year, in 1934, the NSM continued burning through its expansion fund, almost depleting it with a 195,000 gulden loss. The following year saw the company going into debt to cover their expenses. The company is not shown to be solvent again until 1937, when they managed to start paying off their recently-incurred debt.

As can be seen in the year-reports of different shipbuilding companies, the income of the shipyards was severely reduced during the years following the Great Depression's onset in 1929. The profits of the NSM declined from 520,000 guldens on the 31st of December 1929, to a loss of 260,000 guldens on the 31st of December 1935; the company only recovered profitability in 1937.[47] Other shipyards fared little better. Wilton and Fijenoord had just merged into Wilton-



2.2 *Indexed profits of RDM, Wilton-Fijenoord, and NSM. Profits from 1929 taken as year against which has been indexed*

Source: Own calculations based on: Stadsarchief Amsterdam, 30300 Archief van de Nederlandsche Dok- en Scheepsbouw Maatschappij, 335 Nederlandsche Scheepsbouw Maatschappij NV, Financiële jaarverslagen van de Nederlandsche Scheepsbouw Maatschappij, 1931-1944; Rotterdamsche Droogdok Maatschappij, "Jaarverslagen van de RDM," RDM-Archief. 2017, accessed December 14, 2020, https://www.rdm-archief.nl/jaarverslagen-van-de-rdm/; Gemeentearchief Schiedam, 195 Archief van Wilton-Fijenoord 1875-1985, 1327 Stukken van algemene aard, aandeelhoudersvergaderingen van de NV Wilton's Dok en Werfmaatschappij, later van de Dok en Werfmaatschappij Wilton-Fijenoord NV. See Appendix 1.

[47] Ibid.

Fijenoord in 1929, and the company reported shared profits to the amount of 1.8 million guldens in that year, whilst reporting a loss (or rather a use of the company's reserves) of 315,000 guldens in 1935. The RDM reports a profit of 2.3 million guldens in 1929, whilst only reporting profits amounting to 300,000 guldens in 1935. The different profits made by the shipbuilders have been indexed and can be found in graph 2.2. For each shipyard, the profits in 1929 are taken as a benchmark with which to compare the results in the following years. All three shipyards show a similar intial trajectory at the start of the Crisis Years. Although 1930 was still a good year for all three, in 1931, profits started a sharp decline. What can be seen from this graph as well is the impact that the repair branches of the major shipbuilding companies had on their profitability. Whilst the NSM did not regain profitability before 1936, the RDM managed to remain profitable throughout the Crisis, which they attributed to the repair-work remaining a somewhat steady source of revenue.[48] Wilton-Fijenoord did not escape having to draw upon their reserves, but their repair branch helped them to keep losses manageable and their revenue showed an upturn as early as 1935.[49] The NSM is the company that reported the highest losses during the Crisis Years in their yearly reports. However, whilst the NSM reported the highest losses, and the NSM Yearly Reports mentioned the Crisis Years most frequently of all three shipbuilders, both the RDM and Wilton-Fijenoord mentioned having to make significant deductions on the number of workers and workers' pay, as well as indicating that the shipbuilding market had dried up and that ship-repair had been their fall-back option instead of building new ships.

This illustrates the major problem for shipbuilders in this period: Dutch customers were not interested in buying new ships, since their margins slimmed and the world economy was in recession, yet, at the same time, the measures taken to combat the recession meant there was very little international trade. There was potential for international customers, as shown by the fact that the NSM built ships for foreign customers, but the state of the currency and the refusal of the Dutch government to devaluate the gulden meant that those contracts which could be taken, would not earn shipbuilders a profit. Those shipyards that could, fell back on their repair

[48] Rotterdamsche Droogdok Maatschappij, "Jaarverslagen."
[49] Gemeentearchief Schiedam, 195 Archief van Wilton-Fijenoord 1875-1985, 1327 Stukken van algemene aard, aandeelhoudersvergaderingen van de NV Wilton's Dok en Werfmaatschappij, later van de Dok en Werfmaatschappij Wilton-Fijenoord NV.

branches, whilst a shipyard like the NSM, whose sole business was building new ships, did not have that luxury.[50] When the NSM built ships for customers from Norway and the Soviet Union, therefore, this must not only be seen as a company outperforming competitors internationally. Whilst that was part of what happened, the NSM attracting international contracts in a time of crisis was also a necessity for the shipbuilding company, as it did not have the capability of using its wharves for other purposes than building new ships.

Shipyard	**Number of ships >500 GRT built**
NSM	19
De Merwede	1
Wilton-Fijenoord	7
De Noord	3
De Schelde	2
P. Smit	4
RDM	5
Van der Werf	1
Van der Giessen	1
A. Vuijk	1

2.3 *Ships built per shipyard, 1932-1936*

Source: Own calculations based on: The Excess Insurance Company*, Lloyd's Register of Shipping 1936 Steamers & Motorships of 300 Tons Gross and Over* (London 1936), 5-1082.

Other shipbuilders did not build many large ships during the Crisis Years, whilst the NSM not only built a significant number of large ships during this time, but also built those ships for new customers. These new customers were often not Dutch customers.[51] This begs the question: How did the NSM manage to reach these new customers during a period when one would think customers would stick to the sellers they knew and, presumably, trusted. The NSM may not have had the highest income of any shipbuilder in the Netherlands during this time, but the ships they

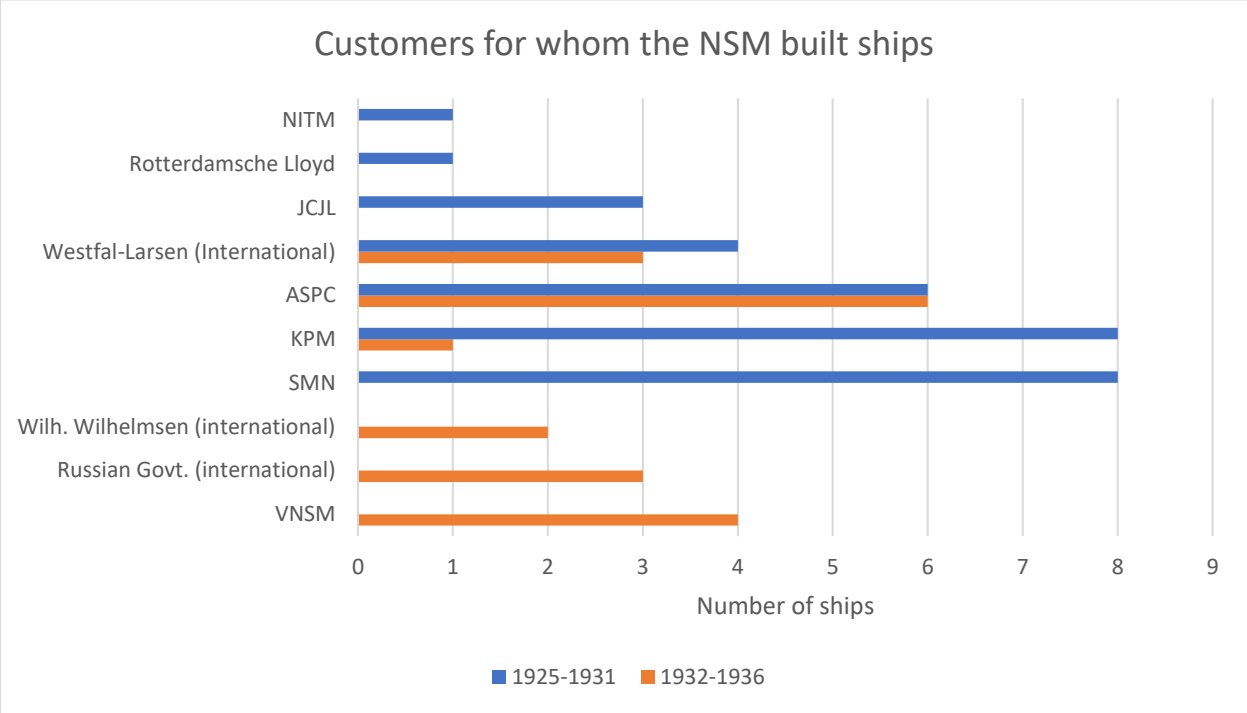
[50] Stadsarchief Amsterdam, Financiële Jaarverslagen.
[51] The Excess Insurance Company, *Lloyd's*, 5-1082.

did build were built for new customers during a time when the market for ships was contracting as opposed to expanding.

The effects of the Great Depression for shipbuilders were many, and overwhelmingly negative. Although none of the larger shipyards went under, many lost revenue, and far fewer ships were built during than before the crisis. The Depression also caused the Dutch government to take measures intended to strengthen the economy. These measures did not always have the desired effect, as the deflationary approach, and maintaining the Gold Standard by the Dutch government, decreased the competitiveness of Dutch shipyards internationally. Prices of Dutch labour and products soared relative to foreign competitors. Orders that were previously placed, were no longer as valuable when other countries let go of the Gold Standard. Many Dutch shipyards fell back on their repair branches, and most had to either borrow to stay afloat, dip into their financial reserves, or both. The NSM did not have the financial means to manage on their own, and had to rely on reserves and loans at this time to continue operating.

3. Which customers ordered from shipbuilding companies in the Netherlands before and during the Great Depression?

The NSM built 21 ships in the period from 1932 to 1936. Of these 21 ships, eight were built for foreign customers. It is interesting to see such a large portion of the ships were built for foreign companies. In the period before the Great Depression, from 1925 through 1931, the NSM built four ships for one client that was not Dutch. These were four ships built for the Norwegian company Westfal-Larsen&Co, one of the largest Norwegian shipping companies based in Bergen. These four ships were all tankers, part of a budding Norwegian Tanker shipping fleet, one of the few shipping sectors that managed to grow during the Great Depression.[52] During the Crisis Years, the NSM built twice as many ships for foreign customers than they did in the period immediately preceding it. Westfal-Larsen was, again, the company that ordered three of these, all three of these being tankers. Of the other five ships, two were ordered by Wilhelm Wilhelmsen, another Norwegian shipping company, this one located in Oslo. These two ships were built for both cargo and passenger transport. The remaining three ships were built for a



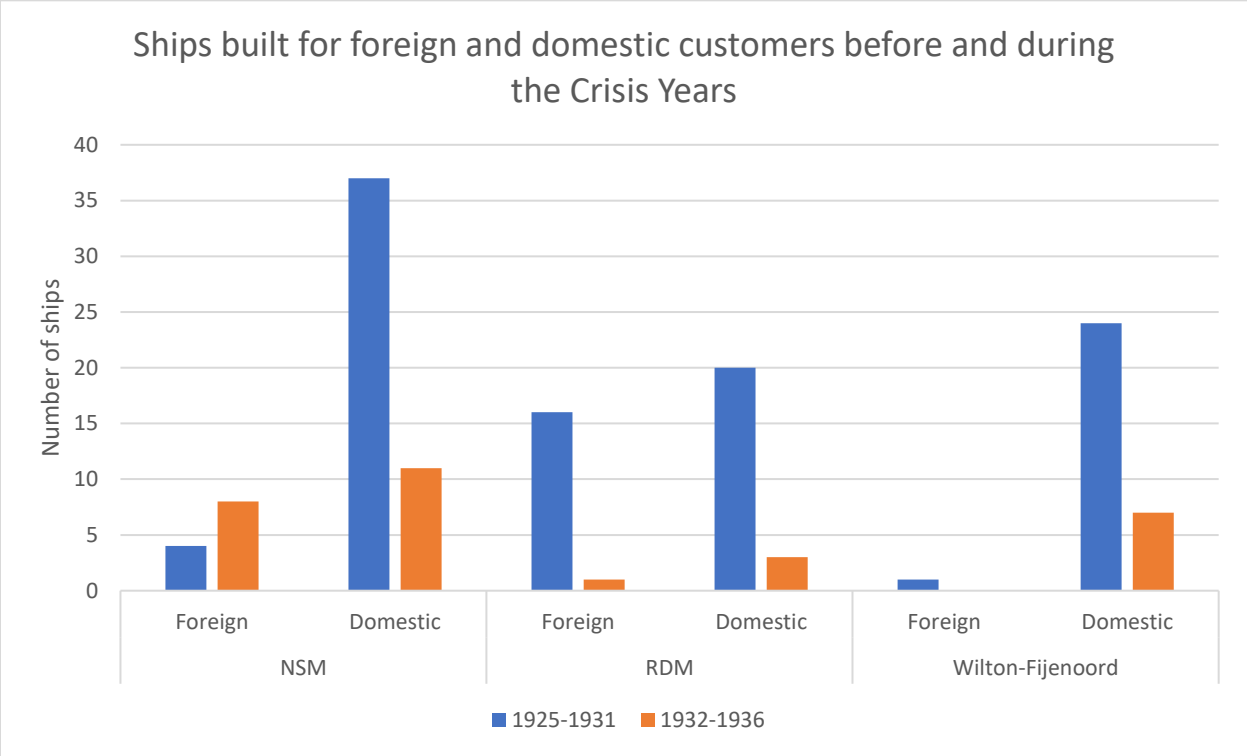
3.1 *Ships built per customer before (1925-1931) and during (1932-1936) the Crisis Years, by the NSM*

Source: Own calculations based on: The Excess Insurance Company, *Lloyd's Register of Shipping 1936 Steamers & Motorships of 300 Tons Gross and Over* (London 1936), 5-1082.

[52] Tenold, "Crisis? What Crisis?," 119-120.

very different sort of customer: the Soviet government. These were the A. Andreev, Kosarew and Valeriy Meshlauk. All three of these were cargo ships.[53] The NSM clearly managed to get international orders, but not all of these were from companies that had had prior business dealings with the NSM.

The Great Depression had a significant impact on the number of ships built by the NSM. Before the Depression, they built 41 ships, with only four of these for one foreign customer: Westfal-Larsen. [54] During the Depression, the NSM built 19 ships, of which eight were for foreign customers. The share of foreign orders rose from 10% to 42%. Comparing tonnage of ships built by the NSM, a similar picture emerges. From 1925 to 1931, foreign orders accounted for 15% of the total tonnage of ships. From 1932 to 1936, the corresponding number is 37%.[55] This shows



3.2 *Number of ships built by the RDM and Wilton-Fijenoord before and during the Crisis Years for both foreign and domestic customers*

Source: Own calculations based on: The Excess Insurance Company, *Lloyd's Register of Shipping 1936 Steamers & Motorships of 300 Tons Gross and Over* (London 1936), 5-1082.

[53] The Excess Insurance Company, *Lloyd's*, 5-1082.
[54] Ibid, 5-1082.
[55] Ibid, 5-1082.

that during the Crisis Years, the NSM shifted from producing for mostly Dutch customers, to a more international clientele.

The RDM and Wilton-Fijenoord were two of the domestic competitors in the shipbuilding business capable of building a similar number of ships to the NSM. The RDM built a lot of different ships for different customers before the Great Depression. Of these ships, sixteen were built for customers outside the Netherlands, far more than the NSM's four, as shown in graph 3.2. However, the RDM only built one ship for foreign customers during the Great Depression. In stark contrast to the pre-crisis numbers of the NSM and RDM, Wilton-Fijenoord built 24 ships for domestic customers before the Crisis Years, and only a single one for a foreign customer. This focus on the domestic market continued during the Depression, when Wilton-Fijenoord only built seven ships, all for domestic customers.

Because the NSM expanded its customer base internationally, it managed to keep its shipbuilding branch operational during a time when there were very few domestic clients for shipyards. The RDM and Wilton-Fijenoord did not build ships at all in some of the years of the Great Depression. They idled their building wharves and focussed on ship-repair.[56] This was in stark contrast with the NSM, which decreased the total use of the shipyard, but never idled its shipbuilding wharves entirely. This issue will be adressed later in this research, but it is indicative of the differences between the shipyards. The NSM was entirely focussed on the building of new ships, whilst shipyards like Wilton-Fijenoord and the RDM could, in a pinch, rely on their repair-yards to maintain solvency in a crisis, according to the board of the NSM.[57]

From a different perspective, the orders for the NSM are interesting as well. Looking at the RDM's international orders, there are a lot of different customers, usually ordering just a single ship.[58] The NSM, in comparison, only had one more customer before the Depression, compared with the years of the Depression: seven compared to six. This difference is important one when looking at the effectiveness of the NSM. Whilst a company like the RDM managed to serve a large number of foreign customers for lower numbers of ships, when business became

[56] Rotterdamsche Droogdok Maatschappij, "Jaarverslagen;" Gemeentearchief Schiedam, Aandeelhoudersvergaderingen.
[57] Stadsarchief Amsterdam, Financiële Jaarverslagen.
[58] The Excess Insurance Company, *Lloyd's*, 5-1082.

scarce, they lost all of the international customers they had. The NSM, by contrast, served a smaller number of customers with multiple ships each, managing to maintain quite a few of these customers even during the Depression.[59]

Before the Great Depression, the customers of the NSM were predominantly Dutch, as can be seen in the graph detailing the customers of the NSM.[60] Some of these ships were built for companies in the Netherlands, like the Anglo-Saxon Petroleum Company (ASPC), a subsidiary of the company now known as Shell. Other Dutch companies that had contracts with the NSM were the Koninklijke Paketvaart Maatschappij (KPM) and the Java-China-Japan Line (JCJL), other Dutch companies, both of which transported packages, mail and people in the Far East. The KPM specialised in transport around the Dutch East Indies and the JCJL, as its name implies, did the same between Japan and China. The Scheepvaart Maatschappij Nederland (SMN), for which the NSM built multiple ships as well, performed the same tasks between Western-Europe and East-Asia and Indonesia. These customers also ordered at the RDM and Wilton-Fijenoord, but they ordered far fewer new ships during the Depression than before.[61]

The most prominent foreign customer of the NSM in this time was the Norwegian shipping company Westfal-Larsen, ordering ships both before and during the Great Depression.[62] Like the NSM, which was founded in 1894, Westfal-Larsen was a relatively new company. It was founded in 1905 and primarily operated between North and South America and Western Europe, mainly operating tankers and running a liner service between Europe and the American East Coast. Westfal-Larsen also ran a lot of tramp shipping in this time. Tramp shipping, as we saw before, is the shipping of goods without a regular schedule or designated routes, rather opting to chase orders ad hoc and going with what's available at any given time. Westfal-Larsen continued ordering ships during the Great Depression, and exclusively ordered at the NSM when ordering from Dutch shipyards.

Of the pre-crisis clients of the different shipyards, most were Dutch. This makes sense, as the shipping companies in the Netherlands would be more familiar with Dutch shipbuilding

[59] Ibid, 5-1082.
[60] Ibid, 5-1082.
[61] Ibid, 5-1082.
[62] Ibid, 5-1082.

companies, and ships were often built for transport between the Netherlands and its overseas possessions, or between the different colonies themselves. It is also interesting to see that different shipyards had different kinds of foreign customers. The RDM built 36 ships between 1925 and 1931, accounting for a significant share of Dutch shipbuilding in the period, for both a domestic and foreign clientele. Significantly, the RDM had more foreign than Dutch customers, despite building more ships for domestic clients. Many of the foreign companies that bought RDM ships only ordered one ship.[63] The RDM built twenty ships for domestic customers.

Comparing this to the NSM, it is easy to see that there were some differences in the kinds of orders attained. The NSM built 41 ships from 1925-1931,[64] but where the RDM built for nineteen different customers, the NSM had only seven different customers. The customers of the NSM during this period were by and large domestic customers: Westfal-Larsen, from Norway, was the only foreign company that bought new ships. In this regard, the NSM is closer to Wilton-Fijenoord, which only built a single ship for one foreign customer before the Crisis Years. The NSM only started to distinguish itself by catering to more foreign customers during the Depression.

During the crisis, as we saw, quite a few companies fell back on their repair branches. The RDM is a prime example of these companies, only building four new ships for different customers between 1931 and 1936, whilst still, though barely, maintaining profitability, as shown earlier in graph 2.2. All four of these ships were built for different customers, making the RDM build one ship per customer. Though profits fell, the RDM did not run a deficit during the Crisis Years. Wilton-Fijenoord too, largely fell back on repair-work. Although they did not avoid some losses during the Depression, their losses were lower than those of the NSM, whilst building far fewer ships.

There were multiple foreign clients for the NSM who ordered ships during the Great Depression, despite not having had previous business contacts with the shipyard.[65] Of the three international customers, Westfal-Larsen had been a customer in years before already, and Wilhelm Wilhelmsen was a similar Norwegian shipping company, this one shipping freight rather

[63] Ibid, 5-1082.
[64] Ibid, 5-1082.
[65] Ibid, 5-1082.

than oil, and thus needing cargo ships rather than oil tankers. The third and final customer was the Russian government.

At this time, Westfal-Larsen was a company innovating through the increased use of oil tankers. They found a partner in the NSM interested in helping them expand their tanker fleet when most shipyards would rather repair old ships than build new ones.[66] The tanker shipping trade did not decline in the same way as other shipping branches during the Depression. As a result, Westfal-Larsen remained interested in buying new ships when other companies were no longer placing new orders.

In a similar vein, the Norwegian shipping company Wilhelm Wilhelmsen was a company expanding during the interwar years, continuing to do so during the crisis as the Norwegian shipping sector still expanded during this time. The Norwegian merchant fleet was rapidly modernising during this time and the different shipping companies involved in this boom ran into the limits of Norwegian shipbuilding capabilities,[67] compelling them to place orders at foreign companies for the construction of new ships. To offset the cost of workers that still needed to be paid, the NSM had to build new ships, and was therefore interested in these new orders when other shipyards would rather focus on repair. Wilhelm Wilhelmsen in this time ordered pretty much exclusively liners, as it had been doing for some time.[68]

Before the Depression, the customers ordering at Dutch shipyards were mostly similar across the different yards. There was a mix of different domestic customers, augmented with some foreign orders. These foreign orders were generally only for a single ship. The one international customer of the NSM pre-crisis, Westfal-Larsen, stands out from this pattern. They ordered multple ships, where other foreign customers only ordered one. During the Crisis Years, Dutch companies ceased most of their orders for new ships. Most shipyards also stopped building ships for international customers. In this, the NSM was different. They continued to build ships for Westfal-Larsen and attracted two other new international customers as well. Both of these other customers also ordered multiple ships. Customers ordering multiple ships meant the NSM

[66] Tenold, "Crisis? What crisis?," 120.
[67] Ibid., 119-121.
[68] Bard Kolltveit and Michael Crowdy, *Wilh. Wilhelmsen, 1861-1994 a Brief History and a Fleet List* (Kendal: World Ship Society, 1994), 22.

did not need to lobby a lot of different customers for orders; they only had to adress a select group of customers to receive orders for the same number of new ships. In this way, the NSM distinguished itself from its domestic competitors, making it one of the ways they managed to survive the Great Depression.

4. What types of ships did Dutch shipbuilders build and how did they build them?

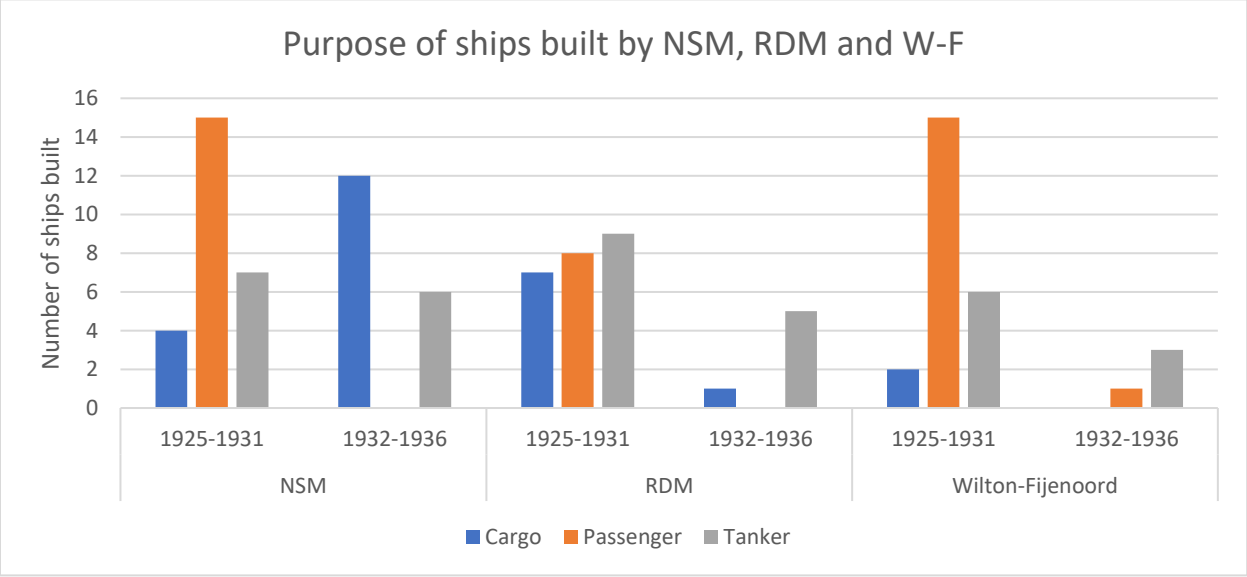
Shipbuilding companies have different ways to market themselves to their customers. Important amongst these is the type of ships they build. Customers will look for ships that serve the specific purposes they are most interested in. A ship meant for passenger travel will not be of interest to a shipping company whose primary business is the shipping of oil, for example. With regards to competitiveness, this means that shipyards need to be perceived to be able to adequately build ships that are attractive for shipping companies to buy. In this chapter, the types of ships that the NSM and other Dutch shipyards built before and during the Crisis Years will be examined, to find whether the types of ships they built, the experience they had with building those different types of ship, and contemporary innovations they utilised in shipbuilding influenced the position the shipyards held in the (international) shipbuilding market.

During the period preceding the Great Depression, the NSM built a variety of different ships. Cargo and passenger transport ships were built for the different Dutch shipping companies that ordered ships before the Great Depression, as well as a few tankers for both the Anglo-Saxon Petroleum Company and Westfal-Larsen in this period. It was common for the Dutch shipyards in this time to build cargo ships for different routes, as many of the Dutch shipyards at that time built ships for Dutch companies that ran various routes within the Dutch colonial empire.[69] These were both cargo ships, built for hauling freight to and from the colonies, as well as passenger ships, shipping people to, between and from the colonies. Examples of companies that serviced such routes were the previously mentioned Koninklijke Paketvaart Maatschappij and the Japan-China-Japan Line. Other Dutch companies for which shipyards built ships were shipping companies that shipped oil, requiring tankers. The Anglo-Saxon Petroleum Company, a subsidiary of Shell responsible for shipping, was a good example of such a company. Their fellow Shell-subsidiary, the Curaçaosche Scheepvaart Maatschappij, also ordered ships from the RDM for example.[70]

The ships built before the Great Depression by both the NSM and its Dutch competitors varied in both size and purpose. The NSM, the RDM, and Wilton-Fijenoord all built differing

[69] The Excess Insurance Company, *Lloyd's*, 5-1082.
[70] Ibid, 5-1082.

quantities of vessels with similar purposes.[71] Most yards built cargo ships, passenger ships, and tankers. The quantities in which they built these ships varied, but the customers for whom these ships were built were not too varied. Domestic customers for the different shipyards were mostly a group of Dutch companies that ordered from multiple different shipyards concurrently. For example, the Anglo-Saxon Petroleum Company ordered tankers from the NSM, the RDM, and Wilton-Fijenoord, and the Koninklijke Paketvaart Maatschappij ordered cargo ships from all three of these shipyards. The differences between the different shipyards are mostly visible in the type of ships they built for foreign customers. Before the Depression, Dutch shipbuilding for foreign customers was not extremely expansive. Customers ordered a small number of ships, meaning they did not return to Dutch shipyards after ordering the first ship. In some cases, like the Manchester-Spain line, this was because the shipping company in question was discontinued. In other cases, this was because the Dutch shipyards were not the main shipyards at which successful foreign companies sought to order ships. The NSM in this example is an outlier, as they had ongoing connections with Norwegian shipbuilders, having started building ships for a Norwegian customer for FA Winge&Co in Oslo, in 1921, and for Westfal-Larsen.[72] The NSM thus



4.1 *Purpose of ships built by the NSM, the RDM, and Wilton-Fijenoord both before and during the Crisis Years*

Source: Own calculations based on: The Excess Insurance Company, *Lloyd's Register of Shipping 1936 Steamers & Motorships of 300 Tons Gross and Over* (London 1936), 5-1082.

[71] Ibid, 5-1082.
[72] Ibid, 5-1082.

had a slight head start with regards to Norwegian customers, as they could profit from name-recognition amongst Norwegian shipping companies. This helped them during the Depression, when domestic orders were in short supply.

The types of ships built by the different Dutch shipyards show another reason why the NSM could maintain competitiveness during the Crisis Years. Prior to the Crisis Years, the NSM built a somewhat even mix of tankers, cargo and passenger ships. The same goes for the RDM and Wilton-Fijenoord, although the latter's main focus was on passenger vessels. During the crisis, the NSM concentrated on tankers, as did the RDM. Wilton-Fijenoord built similarly low numbers of tankers and passenger vessels during the crisis. This was mostly because tankers and cargo ships remained a viable investment for shipping companies during the Crisis Years, whilst passenger vessels did not retain this value, as fewer people had the money for long-distance travel. The previous connection with Westfal-Larsen meant the NSM held an edge over competing shipbuilders due to their experience building tankers for foreign customers.

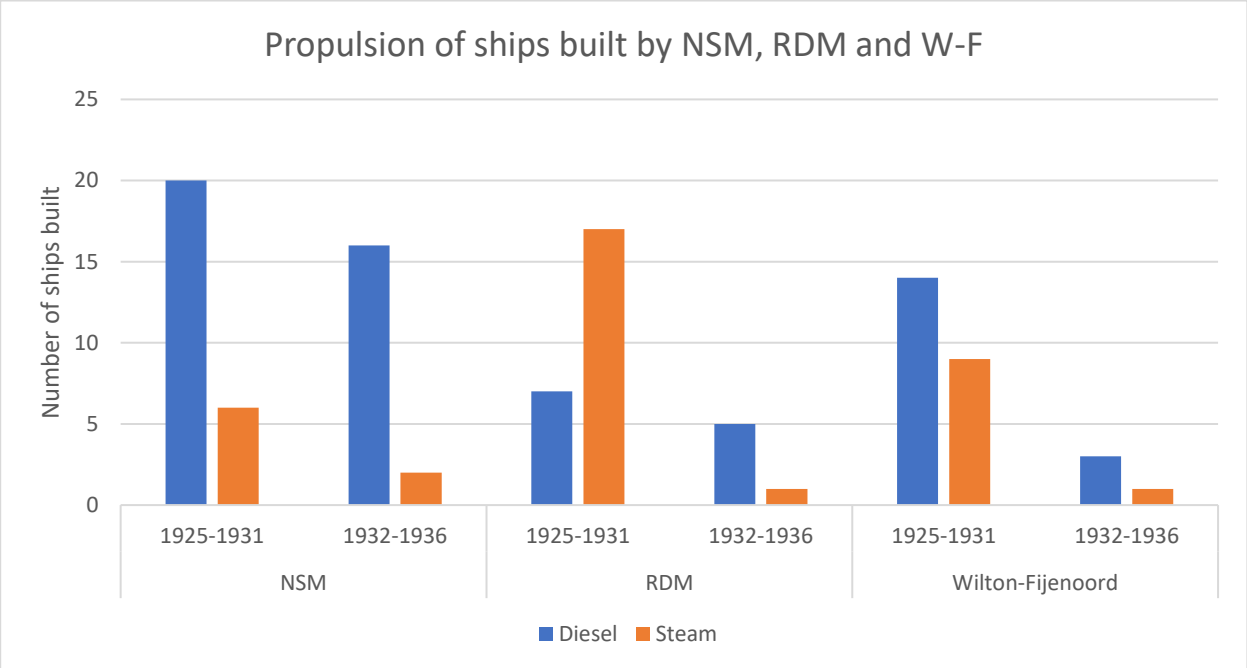
Other than adjusting to the changing demand for ship-type, Dutch shipyards adopted different innovations to remain competitive. In her research on innovations in shipbuilding in the Netherlands, Mila Davids mentions multiple innovations that were adopted to different degrees. She mentions the design-process through which ships were built, the increasing use of welding, rather than riveting, to connect metal parts in ships, the use of high-quality materials, and the introduction of diesel propulsion.[73] Not all of these innovations were adopted to the same degree: for a long time Dutch shipyards lacked design facilities of their own, and a lack of skilled welders meant that, although significant parts of ships ordered by the navy were welded, mentions of welding in documents detailing Dutch ship-design before 1937 are non-existent.[74] Dutch shipyards did, however, adopt other innovations mentioned by Davids for different reasons and to different degrees: materials and propulsion.

[73] Davids, *Knowledge Circulation*, 5-11.

[74] J. Bruheze, H.W. Lintsen, A. Rip, J.W. Schot, "Het Scheepsbouwcomplex," in *Techniek in Nederland in de Twintigste Eeuw, deel 6: Stad, Bouw, Industriële Productie*, ed. J.W. Schot en A.A.A. de la Bruheze, (Zutphen: Walburg Pers, 2003), 347-351.

Firstly, Dutch shipyards were enthusiastic users of high-quality Siemens-Martin steel.[75] This material was far superior to the previously-used iron and was available in high quantities for low prices due to the Netherlands close proximity to Germany, where production was ample and factories sold their surpluses on the cheap internationally. This ease of acquisition of high-quality materials made Dutch shipyards able to attract customers more easily, even as the production of this same steel domestically had to wait until 1939.[76]

The second enthusiastically embraced innovation propagated in the early twentieth century was the development of diesel-powered engines. The NSM was at the forefront of the transition to diesel engines. Compared to rival shipbuilding companies, the NSM started building diesel-powered ships earlier and in larger numbers, as shown in graph 4.2. From 1925 up to and including 1931, the NSM built twenty diesel-powered ships, compared to six steam-powered ships. During the crisis, the NSM built sixteen diesel-powered ships, compared to two steam-powered ships. The NSM's competitors built far fewer diesel-powered ships. The RDM and



4.2 *Propulsion of ships built by the NSM, the RDM, and Wilton-Fijenoord both before and during the Crisis Years*

Source: Own calculations based on: The Excess Insurance Company, *Lloyd's Register of Shipping 1936 Steamers & Motorships of 300 Tons Gross and Over* (London 1936), 5-1082.

[75] Stadsarchief Amsterdam, 30300 Archief van de Nederlandsche Dok- en Scheepsbouw Maatschappij, Nederlandsche Scheepsbouw Maatschappij NV, Bestekken, tekeningen en berekeningen.
[76] Davids, *Knowledge Circulation,* 5-7.

Wilton-Fijenoord built twelve and seventeen diesel-powered ships during this period as a whole, and eighteen and ten steam-powered ones. Together, the RDM and Wilton-Fijenoord built a number of diesel-powered ships similar to the NSM on its own.[77]

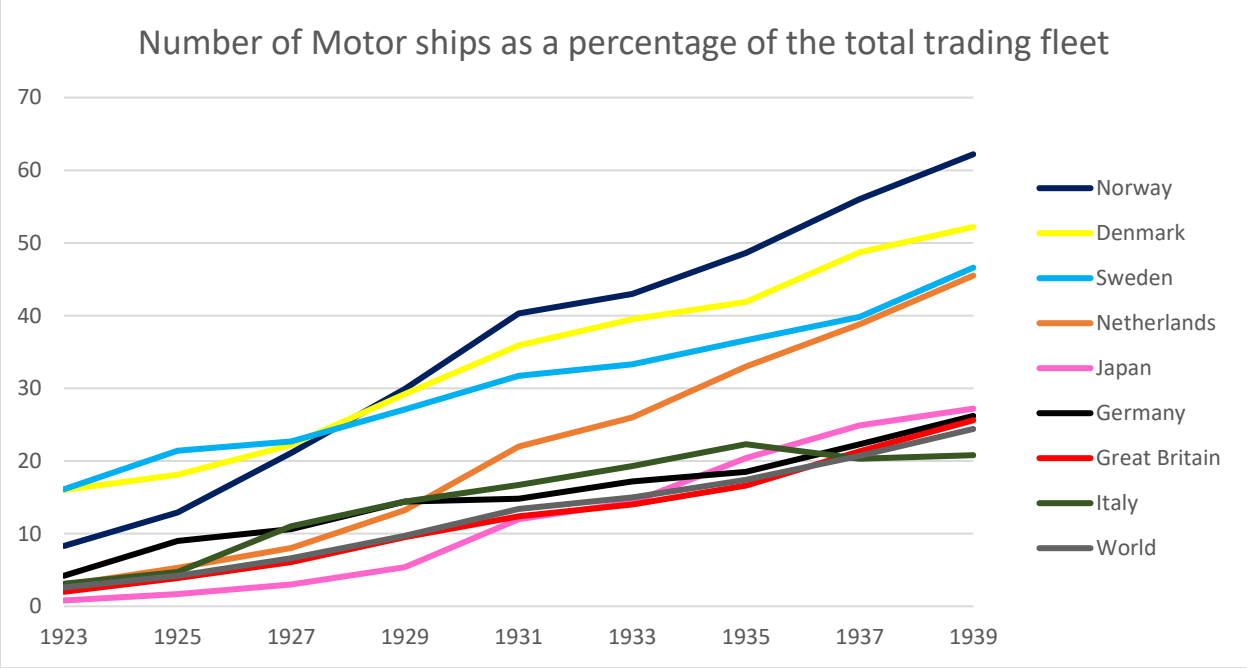
Diesel engines were more efficient than the steam engines and steam turbines prevalent earlier. The engines had their disadvantages: Diesel engines did not generate significant torque at a small number of revolutions per minute, making it more difficult to operate at lower speeds. In addition, they were initially incapable of operating in reverse, meaning they were unsuitable for use in shipbuilding. The injection of the fuel into the engines was an issue as well, leading to significant delays in the adoption of the diesel engine by shipbuilding companies for some time.[78]

These problems were fixed one by one in a matter of a few decades after the first diesel engines were built in the late nineteenth century, and by the 1920's, usage of diesel engines steadily rose globally.[79] Early adopters of diesel engines were various Scandinavian countries, with both Sweden and Denmark having over 15% of their commercial fleets using diesel engines in 1923 already. At this point not even 3% of the Dutch trading fleet consisted of ships propelled by diesel.[80] The share of diesel-powered ships, often referred to as motorships, as part of countries' merchant fleets can be seen in graph 4.3.[81] What this graph quite clearly indicates, is that the Dutch merchant fleet was part of a group of states' fleets that were hesitant, at first, to adopt the diesel engine, but Dutch shipping companies were quick to adopt the motorship in the late 20s and early 30s. Additionally, it shows the emergence of two groups of countries: one where motorships were quickly adopted, and another group of countries where they were not introduced as fast. Noteworthy is the relative lack of movement between the two groups, with the Netherlands being the only country moving from the 'small number of motorships'-group to the 'large number of motorships'-group. Davids indicates that the number of steam-powered ships in the Dutch merchant fleet fell from 345 in 1915, to 319 in 1938.[82] This drop does explain

[77] The Excess Insurance Company, *Lloyd's*, 5-1082.
[78] R. Borrás, R. Rodríguez and M. Luaces, "Starting of the Naval Diesel-Electric Propulsion. The Vandal," *Journal of Maritime Research* 8, no. 3 (Spain, 2011): 3-16, https://www.jmr.unican.es/index.php/jmr/article/view/155.
[79] G. Henning and K. Trace, "Britain and the Motor ship: A Case of the Delayed Adoption of New Technology?," *The Journal of Economic History* 35, no.2 (Cambridge, June 2005): 353-385, https://www.jstor.org/stable/2119412.
[80] Henning and Trace, "Britain and the Motor ship," 354.
[81] Ibid., 354.
[82] Davids, *Knowledge Circulation*, 5.

a small part of the rise of motorships as a percentage of total Dutch shipping volume, but the larger part of this increase is the rise of the number of motorships during the same 23 years from 15 to 488.[83] By the end of the thirties, however, the Dutch merchant fleet had just about caught up with early adopter Sweden in how much of the fleet was made up of motorships, but firmly left the countries, amongst whose ranks the Dutch had been in 1923, behind. This is not to say the Dutch merchant fleet of diesel-propelled ships actually outweighed the British or Japanese fleet, but as a percentage of the total tonnage, the Dutch shipyards had delivered a larger amount to the domestic trading fleet.[84]

The advantages of diesel engines for ships were significant: diesel engines performed far more efficiently than steam turbines and steam engines did. This was due to the higher thermal efficiency of diesel, compared to conventional steam engines.[85] In addition, diesel engines consumed a smaller amount of fuel compared to steam engines, meaning ships built with a diesel engine had more range on the same volume of liquid fuel. Diesel engines were a lot safer than



4.3 *Motor ships as percentage of total trading fleet, per country and for the world as a whole, 1923-1939*

Source*:* R. Borrás, R. Rodríguez and M. Luaces, "Starting of the Naval Diesel-Electric Propulsion. The Vandal," Journal of Maritime Research 8, no. 3 (Spain, 2011): 3-16, https://www.jmr.unican.es/index.php/jmr/article/view/155.

[83] Ibid., 5.
[84] Henning and Trace, "Britain and the Motor ship," 354.
[85] Borrás, Rodríguez and Luaces, "Starting Diesel-Electric Propulsion," 6.

steam engines as well, as diesel engines did not produce sparks, significantly reducing the risk of fires. This was particularly important when transporting oil, an ever-increasing commodity during the early twentieth century.[86] Tank ships were well-suited to adopt diesel engines because of these reasons, and those were built in increasing numbers by Dutch shipyards.

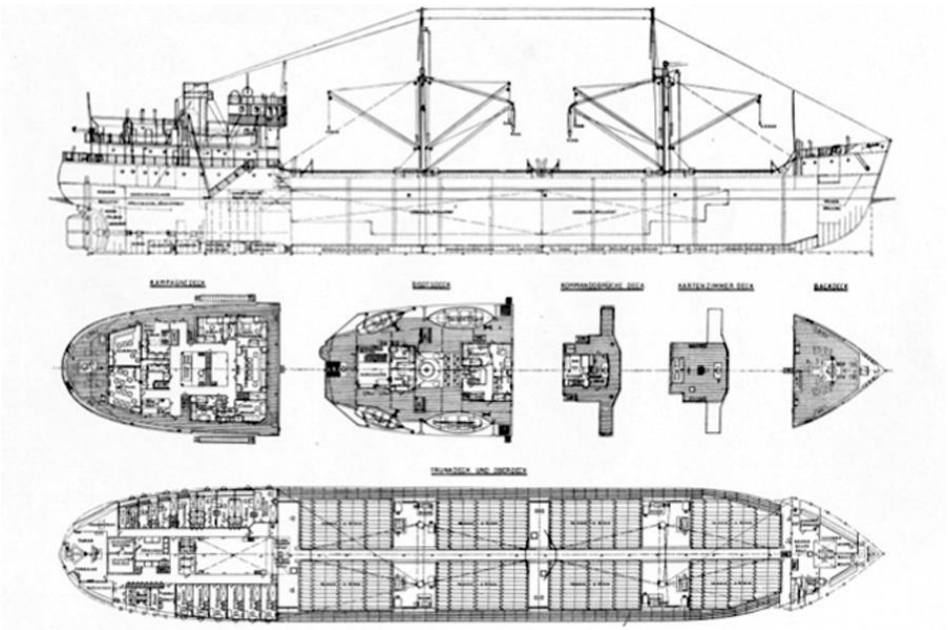
An additional advantage of diesel engines was the expertise present in the Netherlands. Machine factory 'Werkspoor' was among the earliest builders of diesel engines. Many of the NSM-built ships in this period had their engines built by Werkspoor, or by other companies in cooperation with Werkspoor. The engines built by Werkspoor were of a high enough quality that they were licensed by foreign companies as well. This was one area of modernisation of the shipbuilding industry in the earliest twentieth century where the Dutch industry was an innovator itself, and not a follower of outside trends.[87] This early application of diesel engines was a important innovative move by Dutch shipbuilders, and Werkspoor's expertise was of significant value to the Dutch shipbuilders. The quality of Werkspoor engines and the close relationship the NSM had with Werkspoor led to interesting occurrences, like the installation by the NSM of a Werkspoor engine in a ship built by the RDM.[88] This gives a clear indication of the edge that the work the NSM performed held over other Dutch shipyards.

As seen in the short answer to the previous question, tankers made up an important part of the ships the NSM built before the Great Depression, and during the Great Depression a large portion of the ships built was made up of tankers as well. The new customers that were acquired during the Great Depression, Wilhelm Wilhelmsen and the Soviet Union, ordered different ships instead, both requiring ships to transport goods, not oil. In the yearly reports of the NSM, these projects are not mentioned individually, but they are taken as a group, with the report stating almost none of the contracts taken in this time were making a profit. The report specifies that the relative prices in the Netherlands were (in 1935) starting to climb back to parity with prices for ships in other countries, but that this mostly concerned large ships, and that smaller ships (in the case of the NSM, the ships built for the USSR qualified for this, despite still having a

[86] Davids, *Knowledge Circulation*, 5.
[87] Ibid., 10.
[88] Stadsarchief Amsterdam, 30300 Archief van de Nederlandsche Dok- en Scheepsbouw Maatschappij, 544 Nederlandsche Scheepsbouw Maatschappij NV, Bestek voor de machine-installatie van 500pk van het stalen motorschip 'Moesie' voor de Koninklijke Paketvaart Maatschappij, 1929.

displacement of about 5.000 tons) were still less profitable for Dutch shipyards to build, due to the devaluation of foreign currencies.[89]

The ships that the NSM built for the Soviet Union are interesting with regards to their build as well. They were specially designed, optimised to save as much space for goods as possible. In contrast to contemporary designs, the loading doors were enlarged to make the cargo bay more accessible, and the cargo bay was made as square as possible, to waste as little space as possible when the ship was fully loaded. In a similar fashion, the cargo bay was emptied of machinery to have as few nooks and crannies in the hold. The size of the hold doors, which almost matched the size of the hold itself, also made it a lot faster to load and unload the cargo in or from the ship.[90] In conjunction with the improved carrying capacity of these ships (contemporary wood-transport ships could only fill about three-quarters of their holds), the ships were also built to withstand icy seas and temperatures as low as -20 degrees Celsius. The hull



4.4 *Plans of the Walerii Meshlauk*

Source: NDSM-Werfmuseum, NDSM-Werfmuseum, "Cornelis Douwesweg 1922 B," April 2011, accessed December 20, 2020, http://www.ndsm-werfmuseum.nl/cornelis-douwesweg-1922-b.

[89] Stadsarchief Amsterdam, Financiële Jaarverslagen.
[90] Leo van der Spek, "Het Russische Motorschip Walerii Meshlauk," 2019, accessed November 11, 2022, https://www.stichting-ndsm-herleeft.nl/het-russiche-motorschip-walerii-meshlauk.

was designed so as to be able to plough through ice as well.[91] This was because the ships were meant to transport wood from Amsterdam to Leningrad, meaning the ships needed to be able to travel during very low temperatures as well as in icy circumstances. The first order of two ships of this type was followed by another later in the year as well.

The new design was interesting enough to the Soviet leadership that they ordered multiple ships, with promises to buy more ships at the NSM in the future. This was one of the ways in which the NSM distinguished itself to such an extent that it managed to attract new orders. The NSM also patented the design, meaning other Dutch shipyards that could theoretically build such ships were not legally allowed to do so. This made the NSM the only choice for ordering such ships.[92] The other orders the shipbuilding company acquired in this time were not from shipping companies that required the NSM to design new ships themselves, but the company board stated that the use of its own design capabilities was something that should be expanded.[93] The design of the ships was not fully done by the NSM itself, but in cooperation with Bruynzeel, a Dutch company specialising in woodworking.[94]

Dutch shipyards all built similar types of ships for a largely similar group of domestic customers. In general, they did so in a similar fashion as well, with limited use of new techniques like welding, and with high quality Siemens-Martin steel. During the Crisis Years, they all built far fewer passenger ships. The main differences between the different companies were in the ratios in which they built different types of ships, and the ratios in which they utilised new shipbuilding techniques.

The NSM built a comparatively high number of diesel-powered ships before and during the Great Depression, whilst other shipyards built steam-powered ships for longer. This comparatively high use of new techniques and more relevant ship-types, increased the relative competitiveness of the NSM. This meant they were more interesting when foreign companies were looking for a company at which to place orders, and it helped the NSM survive the Great Depression.

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[91] Ibid.
[92] NDSM-Werfmuseum, *NDSM-Werfmuseum*, 'Cornelis Douwesweg 1922 B.' April 2011, accessed December 20, 2020, http://www.ndsm-werfmuseum.nl/cornelis-douwesweg-1922-b.
[93] Bruning, *40 Jaar NSM*, 59-77.
[94] Ibid., 59-77.

5. In what other ways could and did shipbuilders distinguish themselves?

The question discussed in this chapter is: How did the NSM distinguish itself from other Dutch shipbuilding companies, such as the RDM? There were more Dutch shipbuilding companies, many of which had the potential to cater to international orders, but most of them failed to do so in significant numbers, with none of them coming even remotely close to the numbers achieved by the NSM. To answer this question, I will explore what the NSM did differently in terms of ship production, organisation of the company and international profiling. Additionally, it will be important to keep an eye on what distinguished the NSM among Dutch shipbuilders.

In previous chapters, it has been illustrated that the NSM was one of the most productive shipyards in the Netherlands. Both in terms of number of ships, as well as in terms of total tonnage of ships built, the NSM was at the top of the field for Dutch shipyards. At the same time, they made more use of new techniques and they built the more relevant tankers in greater numbers than other Dutch shipyards.[95] The expansion in this segment prior to the Depression, and the establishment of clients interested in these ships was very important to the continuation of orders coming in for the NSM.

The NSM had other factors working in its favour during this time. The mayor of Amsterdam, De Vlugt, a Dutch politician, who also had a seat in the Dutch senate, was part of the board of the company.[96] This political influence was not by definition a boon, but the mayor at the time was very business-oriented. He had been active in the shipbuilding sector; his father had been working as a carpenter at the Royal Shipyard in Amsterdam. In his book on the mayor of Amsterdam during this time. Kaal writes that the mayor visited the Soviet Union on behalf of the NSM. This was formally because the chairman of the NSM was indisposed, but Kaal claims that sending the mayor had other aims as well. One of these was acting as a Dutch representative to Moscow. This amounted to a sort of half-recognition of the Soviet Union during a time when the Dutch government did not actually recognise the state.[97] The municipal council was involved in these negotiations as well. Kaal reports that by 1934, the NSM actually stood on the brink of foreclosure, and contemporary newspapers had been reporting the NSM's imminent closing-

[95] Stig Tenold, "Crisis? What Crisis?," 118-121.
[96] Stadsarchief Amsterdam, Financiële Jaarverslagen.
[97] Kaal, "Hoofd van de Stad," 75-76.

down for some months.[98] It was at this point that the council called upon the head of the NSM board to speak with him and see if there was something that could be done about the looming end of the company.[99] The municipal council wrote a report, which was kept secret for fear of the shipyards in Rotterdam noticing the opportunity and seizing it for themselves, rather than having the Amsterdam-based NSM gain the orders from the Soviet Union.[100] The report claimed that the Rotterdam-based shipyards were better suited for orders placed by the Soviet Union, and considered it paramount that this information was not shared with these Rotterdam-based yards.

In Rotterdam, meanwhile, similar calls for increased ties with the Soviet Union were made. However, unlike in Amsterdam, the Rotterdam city council did not endorse any rapprochement to the Soviet Union, arguing that the pro-Soviet propaganda value of such endorsements of relations with the new Russian government would be too great.[101] In fact, though mayor Fortuyn of Rotterdam was involved in promoting the interests of the Rotterdam harbour, his approach never went as far as De Vlugt's did. The two mayors were on opposite sides in the competitions between their cities, for example in the effort to procure the official national airport, which Amsterdam won, and, importantly in this case, the competition to attract orders for shipyards and for the shipping of wood, which Amsterdam attained by virtue of De Vlugt's journey to Moscow.[102]

The journey was controversial, not just because of the lack of recognition of the Soviet Union. The mayor was a member of the Anti-Revolutionaire Partij, the ARP, which was both confessional and very conservative. The ARP was one of the parties in power at this time, and mayor De Vlugt personally knew the Dutch prime minister, Colijn. The minister for the interior of

[98] "Sombere Vooruitzichten voor de Nederlandsche Scheepsbouw Maatschappij," *De Banier,* October 12, 1934, Delpher; "Nieuw Schip bij de Nederlandsche Scheepsbouw Maatschappij," *De Banier,* November 2, 1934, Delpher; "Ontslag van Negenhonderd Arbeiders," *De Locomotief,* October 13, 1934, Delpher; "Nederland als Duurteland," *De Locomotief*, Ocotber 29, 1934, Delpher; "Let op uw Saeck!" *De Locomotief,* December 31, 1934, Delpher.
[99] "De Moeilijkheden der Nederlandsche Scheepsbouw Maatschappij," *Gooi en Eemlander*, November 2, 1934, Delpher.
[100] Stadsarchief Amsterdam, 5097 Archief van de Gemeenteraad*,* 295 Notulen van de Besloten Vergaderingen, 1935-1951, 10-19.
[101] "Rotterdam en de Handel met Sowjet -Rusland," *De Tribune*, January 3, 1934, Delpher.
[102] H. Kaal, "Running the Big City: The Dutch pre-war mayoralty under construction," *European Review of History* 16, no. 4 (2009)*:* 443-445, https://doi.org/10.1080/13507480903063563.

the Netherlands at this time expected to be subjected to questioning as to the nature of the journey the mayor made by the members of parliament, according to Kaal.[103] A member of the party of the prime minister going to a state with which the cabinet had no official contacts, negotiating for an order for a local company, keeping both the journey and the report about the journey secret, was an interesting development. This development might be explained by the fact that the NSM at this time being desperate for new orders, as the shipyard according to Kaal was almost going to close down.[104] In addition, the Soviet officials drove a hard bargain with the shipyard's director's son,[105] and they were the ones who demanded that a political delegation was sent along.[106] Director Goedkoop himself mentioned that the mayor had done them a great service by accompanying the negotiations.[107]

Not only did the mayor travel to Russia to negotiate orders for the NSM, the municipal council also authorised a loan, on behalf of the city, of almost 480.000 guldens, to make sure the NSM had the means to build the ships that had been ordered.[108] Despite the incoming new orders, the NSM did need additional funding, as it was not possible to attract foreign orders for profit. The low value of the pound in conjunction with the government's refusal to devalue the gulden meant that any orders not issued in guldens, but instead in the prevalent currency of global shipbuilding, the pound, would not net the shipbuilder a profit, but merely kept the yard busy in anticipation of future revenue. This anticipation would eventually come to fruition in later years, when the Dutch government eventually decided to devalue and domestic orders picked up again, but in the meantime, the NSM needed additional funds to make sure the yard did not have to close.[109]

The municipality did not just lend money to the NSM to build the Soviet ships. In addition to the loan, the city of Amsterdam offered guarantees of compensation to the Soviet Union in case the ships were not delivered in time; in case the ships did not, four months after delivery,

[103] Kaal, "*Hoofd van de Stad,*" 76.
[104] Ibid., 74-75.
[105] "De Heer Goedkoop uit Rusland terug," *Telegraaf*, February 2, 1935, Delpher.
[106] "De Reis van Dr. De Vlugt," *Telegraaf,* February 1, 1935, Delpher.
[107] "De Heer Goedkoop uit Rusland terug," *Telegraaf*, February 23, 1935, Delpher.
[108] "Steun aan Scheepsbouw," *Scheepsbouw*, June 7, 1935, Delpher.
[109] Ibid.

reach the numbers agreed upon in the order for the ships; and in case the NSM was not able to pay the Soviet government back the costs that the Soviet Union incurred whilst procuring the required materials for the building of the ships.[110] This indicates that, following the negotiations by the mayor in Russia, the local government continued to support the NSM even in the completion of the orders themselves, and shielded the company from potential negative consequences of the inability to fulfil the orders. This support from the local government was what director Goedkoop of the NSM had repeatedly asked for from the national government in the papers.[111] The involvement of the mayor of Amsterdam was required by the Soviet government not merely for propaganda- and political purposes, but to ascertain the deal would under no circumstances negatively affect the Soviet Union if the NSM did not manage to fulfil its end of the bargain.

At this point, something in the previous paragraphs needs an explanation, for, as we saw, the NSM was on the brink of bankruptcy at this time, despite being the most productive Dutch shipyard even then, as shown in previous chapters.[112] How could the other shipyards in the Netherlands survive, if the most productive shipyard was having trouble making ends meet? This oddity can be explained by the make-up of the NSM shipyard. The RDM and other competing shipyards were both shipbuilders and ship-repairers. The NSM was only a shipbuilder. This explains a few things: In times of crisis, older ships remained afloat longer, requiring more repairs, and therefore, shipyards that had a branch dedicated to ship-repair were better off. This was what the board of the NSM itself also mentioned in its yearly report in 1934.[113] The yearly reports of the RDM showed as much as well. The RDM reported that the ship-repair branch of the company was the part that enabled them to maintain their solvency during this time of crisis.[114]

It is also interesting that, although the city council of Amsterdam being very worried about the prospect that one of the largest employers in the city could go bankrupt, no mention is made of potentially closing the shipyard. It was clear that the shipyard had fallen on hard times, as the yearly reports showed the NSM losing money for several consecutive years, and these reports

[110] Ibid.
[111] "Nederland als Duurteland," *De Locomotief*, October 29, 1935, Delpher.
[112] The Excess Insurance Company, *Lloyd's*, 5-1082.
[113] Stadsarchief Amsterdam, Financiële Jaarverslagen.
[114] Stadsarchief Amsterdam, Financiële Jaarverslagen; RDM, *Droogdok,* 113-126.

said that, if the government did not act, the Netherlands would see its shipbuilding industry reduced to a minimum. The municipal council of Amsterdam did during this time extend a credit of one and a half million guldens to the NSM, something the NSM surprisingly fails to mention in their reports.[115]

The NSM attempted to introduce cost-cutting measures in order to maintain some competitiveness abroad. This was achieved partly by reducing the amount of money spent on personnel. Director Goedkoop mentioned that the NSM managed to reduce its wage bill by 50%. This decrease in wages was attained partly by reducing the wages of the workers still at the yard. At the time Goedkoop mentioned this in the paper, there were still about 900 workers working at the NSM. This was a mix of employees (people on the regular payroll of the company, receiving a monthly salary) and labourers (people on a less permanent hire, receiving a weekly salary), about 60 employees and 840 labourers.[116] This was down from about 2,325 workers in 1930,[117] when there were about 125 employees and 2,200 labourers. With this significantly reduced number of workers, the company did maintain an occupation of its slipways of about 75%. And although the amount of material processed in building the ships in 1934 was only about half of what it had been in 1930, the material processed per employee and per labourer peaked in 1934.[118] This shows that one of the ways the NSM managed to avoid losing too much money on orders that would not net the company a profit after expenses, was by increasing the efficiency of its remaining workers. The smaller number of employees individually contributed more than a larger number of employees had done before the Crisis Years.

During this time, the board of the NSM said that for more complicated ships, like large passenger vessels, Dutch shipyards could not produce profitably. For smaller ships, the Dutch shipyards could not compete with foreign companies, as the prices for labour in the Netherlands were high compared to other states.[119] This implies that the smaller ships that the yard built for the Russians were not actually profitable for the NSM. This explains the credit that had to be provided to the company during this time, and it illustrates how badly the NSM was actually doing

[115] Kaal, "Hoofd van de Stad," 74.
[116] Bruning, *40 Jaar NSM*, 93-95.
[117] Ibid., 93-95.
[118] Ibid., 93-95.
[119] Stadsarchief Amsterdam, Financiële Jaarverslagen.

during this time, although they did not seem to make a large loss yearly. Rather than merely having to eat into the reserves, as the reports implied, the NSM had to take on orders that did not make a net profit, as otherwise the shipyards would be out of operation. If the NSM had not taken on the orders, they would have lost a lot more, meaning that they had to take on orders at a loss.

As mentioned in the first chapter, the NSM did not have a repair branch at the yard. This meant that the yard could not depend on that branch during times of economic downturn. Other shipyards, such as the RDM and Wilton-Fijenoord, had repair branches that helped the yards through these times. The domestic clients of the shipyards stopped ordering new ships during the Crisis Years, since their incomes decreased as well. Shipping companies no longer wanted to order new ships, which meant that they kept their existing fleets afloat for longer. This in turn meant they needed repairs more often, which was something the yards could rely on whilst not having orders for new ships. The NSM, by contrast, could do no such thing. Therefore, employees entitled to continued pay at other shipyards could be put to work at the repair branches, whilst employees at the NSM would only cost the shipyard money if the company did not acquire new orders. This was the primary motivation for the NSM to get orders from international buyers.

The NSM did distinguished themselves from other Dutch shipyards. They managed to get a prominent politician involved in the survival of their company, getting him on the board of directors and sending the mayor and senator to a state that was not even recognised by the very government of which his party was a part. This promotion of the interests of the NSM was not the limit of local government support, however, as the company did not just have the city government represent the NSM in Moscow. They also managed to get the municipal council to authorise significant financial guarantees as well as loans to the company. Extensive local-government involvement with, and support of, the NSM was of paramount importance for the survival of the company during one of the most challenging periods of the 20th century. This support secured not only the company's survival, but also connections with new markets, which, had it not been for the Second World War interrupting foreign trade significantly, could have sustained the company in the longer term as well. The NSM distinguished themselves in more ways than this one, however. Not only was the NSM building ships that were innovative enough

to attract new orders, they also required orders to stay operational as the NSM was strictly a shipbuilding company. The latter is a distinguishing factor, though it is a negative one, since the lack of a ship-repair section to the company meant that, if they had not obtained any orders in this time, the company would in all likeliness have had to default on its rising debts. The NSM distinguished themselves by taking on orders that, though not profitable, allowed the company to stay afloat. In a sense, the reason the NSM was able to get more international orders than any other Dutch company, was because they had no alternative. They did not have the option to sit back and rely on repairs for a while, and therefore had to innovate and build new ships that, whilst not being profitable immediately, allowed them to establish business connections with a whole new part of the market in the Soviet Union, as can be seen from the later orders from the Soviet Union, which the NSM mentioned in its yearly reports.[120] On an added note, the NSM was aware that it suffered a weakness from the lack of a ship-repair branch, missing out on potential income, as can be seen by the post-war merger of the NSM and the Nederlandsche Dok Maatschappij (NDM), another Amsterdam-based shipyard. The merger combined the NSM as a shipbuilder with the NDM, which both built new ships, but also had significant ship-repair activity.

[120] Stadsarchief Amsterdam, Financiële Jaarverslagen.

6. Conclusion

The Great Depression had a significant impact on the Dutch economy. All parts of it suffered from the effects of the Crisis Years, as they would be known in the Netherlands. The Crisis Years were further worsened by the fiscal policy of the Dutch government. They contended that the best way to combat the effects of the crisis was to maintain the Gold Standard and corresponding measures. With a decrease in international trade, domestic orders for new-built ships decreased sharply. The foreign market brought no relief for shipyards, as the rise of relative wages along with worsening exchange rates meant Dutch shipbuilding was unattractive to foreign customers.

The answer to the question 'How did the NSM maintain its international competitiveness and outcompete the other Dutch shipbuilding companies during the Great Depression and its knock-on effects on the international character of Dutch shipbuilding?' is found in a variety of factors, that can be summarised in three different aspects: innovation, connections, and necessity.

The first of these is innovation. The NSM was willing to take certain risks and choose an innovation-centred approach to business during the Crisis Years. Their willingness to construct ships of a new design, as well as their adoption of the diesel engine and tanker ship-type aided their continued shipbuilding at a time when few other shipyards managed to do the same. The NSM managed to distinguish itself from other ship-builders in acquiring orders by making sure the ships they built were among the most modern at the time.

Whilst it was necessary for the NSM to attract orders to make sure the shipyard could continue to exist; these were difficult to obtain. The companies that had ordered the largest number of ships before the crisis, either ceased ordering entirely, or ordered far fewer ships. The NSM therefore had to get creative to acquire business during the crisis. They did so by changing the types of ships built; instead of building liners and transport ships before the crisis, they focussed on new ship designs during the crisis. They built more tankers during the Crisis Years, and attracted orders with innovative designs. Their experience in building more modern ships, having built greater numbers of diesel-powered ships and having connections to innovative partner Werkspoor helped them stand out from their Dutch competitors. This willingness to

change and innovate during times of crisis helped the NSM acquire those orders that were available in a very competitive, and badly disturbed market.

Whilst the NSM was building more modern ships, and more modern ship-types, other Dutch shipyards shied away from such innovations. They rather fell back on more conventional methods, ceasing most of their building work, and focussing on ship-repair. This worked well for them, but meant that from the Crisis Years, the NSM emerged as the largest shipyard of Europe.

The second factor is the willingness and ability to utilise previously established institutional connections for the benefit of the company, convincing the institutions that this would be mutually beneficial. These connections were a significant advantage for the NSM in acquiring orders during these times: They benefitted from these institutional political connections, which both parties were willing to use. The visit of mayor and senator of the governing party De Vlugt proved to be essential in persuading Soviet government officials to grant the NSM orders for three ships of an innovative design. The willingness of the municipal government to assist the NSM with both money and political representation meant that the company was well-poised to find international partners who would place orders with them.

By comparison, whilst the Amsterdam municipality greatly assisted the NSM in order to ensure their continued existence as a large shipyard in the Dutch capital, initiatives from the Rotterdam municipal council were not supported in the same way and to the same extent. The willingness of significant political actors to aid the NSM was instrumental in the survival of the shipyard during the Crisis Years, and meant that the political connections which had been established by appointing the mayor to the board of the company bore fruit at a time when the NSM needed them most.

The third and final factor that determined the NSM's competitiveness in a shrinking market, was the sheer desperation of their situation. The NSM had little choice but to pursue these orders, in spite of their unprofitability. The firm did not have the means to fall back on an industry related to its primary interest that would have enabled them more easily to survive the crisis. Whilst other shipbuilders could revert to primarily repairing ships in the time between high-conjunction cycles, the NSM did not have this possibility. The third factor therefore is not a positive one, increasing a firm's competitiveness. Rather, it is a lack of a back-up option that

makes the company's position bad enough that it has to take on orders that do not generate a profit to make sure the company can stay active.

Before the Crisis Years, multiple Dutch shipyards were active internationally. The NSM was one of many, yet it maintained a modus operandi somewhat different from other shipyards. Where yards such as the RDM built for a plethora of international customers, but usually only attracted orders for single ships, the NSM built larger quantities of large ships for fewer international customers. Additionally, they built oil tankers for foreign customers, which remained in comparatively high demand during the Great Depression. All larger Dutch shipyards built ships for a combination of domestic and foreign customers, but only the NSM built in larger quantities per customer. This situation already distinguished the NSM from its domestic competitors. The NSM worked with a relatively smaller number of customers, but managed to better maintain their connections better during the Depression, to their benefit.

As the Crisis Years began, the NSM managed to continue working on and acquiring new orders from different foreign customers. Their domestic shipbuilding competitors, meanwhile, by and large stopped doing so. At first glance, this may seem strange, but the NSM is the odd one out here, as the rival shipyards all had something the NSM lacked: a repair branch. This enabled them to ride out the wave of unprofitability of shipbuilding orders, by repairing the ships that still were in service, which often, during crises, continued in service for longer. The NSM could not do this and therefore had to take on new orders, even at a loss to the shipbuilding company. The choice for the leadership of the NSM was a simple one: The first option was to idle the yards, which meant paying the employees that were directly employed by the NSM and therefore entitled to a salary, whether there was work at the yard or not. The second path, the one that was actually chosen, was to build ships at a loss, still recouping some money to pay those same employees, but now not having to pay all of it by itself, as the pay for the ship accounted for some part of the salaries. The NSM thus distinguished itself partly by necessity: They required orders for new ships for their shipyard to stay solvent. Paying a skeleton crew to work for new orders that were unprofitable was better than paying a skeleton crew that sat idle at home.

The concrete implications of these conclusions may constitute a shortlist of measures to crisis-proofing a business. They suggest that companies should not fear innovation in the face of

adversity, as it will allow them to find a niche in a market that is otherwise satiated. A crisis in a particular field is not necessarily a universal crisis, and might offer opportunities in other areas. The NSM built tankers during the Crisis Years, because those remained in demand. Innovations can help a company stay relevant when competitors cannot.

At the same time, whilst convincing a senator to visit a hostile country for your business would nowadays be seen as corrupt, acquiring and utilising favourable connections for the business may be highly beneficial for any company, and should not necessarily be punished. When a company is not the only one in its field, and might not even be the best suited to deliver a certain product, having someone represent the company with whom people want to do business makes the company attractive for customers.

Lastly, it never hurts for a business to plan for temporary redundancy of its primary occupation. In the case of the NSM, setting up a repair branch to avoid having to take on unprofitable orders would have benefitted them greatly. In a generalised case, finding industries related to the primary business of a company that will be in demand during times of crisis will be a boon to the company when otherwise it would struggle for solvency when business dries up. Making sure a company has a 'back-up business' that increases in relevance commensurate to a decrease in the primary business is a good way to make sure that the company does not become irrelevant when the primary business (temporarily) falls through.

The present research has focussed on a single shipyard building ships in a relatively short period of time. The results are based on a case-study of a single crisis. The NSM, RDM and Wilton-Fijenoord were not the only shipyards in the Netherlands at the time. The scope of this research has been relatively narrow, and further research could focus on comparing more shipyards during the Crisis Years. Based on the information present in Lloyd's shipping register, other Dutch shipyards will not yield significantly different results, but this has not been verified with extensive research. Shipyards in other countries have been completely left out of the scope of this research. Examining different shipyards in different countries could be an important avenue to explore to see if the results found here can be confirmed in other places as well.

Similarly, the Great Depression was not the only crisis that the shipbuilding sector experienced. Different crises have had different effects on shipbuilding, and an interesting topic

for further research could be whether the results found here are replicated across different periods of time. The Great Depression speaks to the imaginations, but, perhaps surprisingly, none of the largest Dutch shipyards, none ceased to exist. There were some mergers later on, and the merger of the NSM and NDM was an important one, compensating for one of the NSM's weaknesses during the Crisis Years. Dutch shipbuilding underwent significant changes later in the twentieth century, and further research into the periods in which those changes happened could shed more light on the results found in this research.

The shipbuilding industry is not the only sector to be affected by crises. Further research could indicate whether the results of this study hold true for other sectors as well. During the Great Depression, Dutch financial policy did not just affect shipbuilding. It would be interesting to find out whether other sectors had similar companies that came through the crisis by catering to specific demand. This would show whether the shipbuilding industry is subject to certain conditions that do not apply to other industries, or whether the situation in which the NSM found itself was really one of a kind.

What were the longer-term effects of the NSM's expansion during the Crisis Years post-Depression? This is another question that arises after finishing this study. The NSM came out of the Great Depression as the largest shipyard in Europe, but did this give them an advantage after the Depression? Did other shipyards' reliance on repair-work mean that they were slower to acquire new orders after the Depression ended, indicating perhaps that the connections the NSM made during the Crisis bore fruit in the long term, or did they regain work at the same rate as the NSM did? Due to long times between order and finished product in this industry, and the start of World War Two not long after the effects of the Great Depression had started to wane, this topic might be difficult to explore thoroughly. At the same time, an answer to the question as to which shipyards reached pre-war levels sooner, might permit an appreciation of the different strategies that shipyards employed. If the NSM recovered significantly faster than other shipyards, their riskier, innovative strategy was rewarded, and would mean that they came out of the Depression stronger. If, however, further research points out that other Dutch shipyards recovered as fast or faster, the NSM's strategy to forego a repair branch cost them money both in the short and the long term.

Initially, the case of the NSM seems like a fairytale. A crisis engulfs Dutch shipbuilding, but a single shipyard stays strong and continues to build ships, expanding at a time when other shipbuilders could not maintain their production. In reality this was not the case. The NSM was different from other shipyards, as the board, in their yearly reports, often lamented. The lack of a repair branch inhibited the shipyard, by preventing them from focussing on repair in a time when repair became more relevant than building new ships. New orders were attracted at a loss, and only because without them, the NSM was likely to go bankrupt. This might lead to a dim view of the NSM and its methods. If they had just had a repair-yard, all of this would have been far easier. Whilst likely true, this view neglects the innovative way the NSM ended up as the largest shipyard in Europe. The company managed to attract orders in unlikely places at a difficult time. It may not have been optimal, but the continued establishment of new connections meant that the NSM, compared to other Dutch shipyards, was really yards ahead.

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Appendix 1

Year	*RDM*	*RDM-index*	*W-F*	*W-F-index*	*NSM*	*NSM-index*
1929	€ 1.033.333,32	100	€ 1.838.400,00	100	€ 516.326,01	100
1930	€ 495.000,00	48	€ 1.780.120,00	97	€ 586.847,82	114
1931	€ 137.500,00	13	€ 569.549,00	31	€ 348.433,65	67
1932	€ 192.500,00	19	€ 226.440,00	12	€ 81.958,54	16
1933	€ 192.500,00	19	€ 46.412,00	3	€ -38.077,24	-7
1934	€ 165.000,00	16	€ -460.000,00	-25	€ -194.879,98	-38
1935	€ 275.000,00	27	€ -316.151,00	-17	€ -261.476,75	-51