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**The dynamic role of small- and medium-sized multinationals in global
production networks: Norwegian maritime firms in the Greater Shanghai
Region in China**

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The dynamic role of small- and medium-sized multinationals in global production networks: Norwegian maritime firms in the Greater Shanghai Region in China

Abstract

This paper examines the role of small- and medium-sized multinational enterprises in the dynamic development of global production networks in the maritime industry. It studies the dynamism between subsidiaries of Norwegian maritime firms and regional actors and institutions in the Greater Shanghai Region of China from the perspectives of the subsidiaries. It argues that strategic coupling, recoupling and decoupling are partly the results of regional selection mechanisms. However, in the cases where the subsidiaries are embedded within the host region, the strategies and behaviour of MNEs are of decisive importance for the dynamic development of global production networks.

Keywords: China; Global Production Networks; Maritime industry; Multinational Enterprises; Norway; Strategic Coupling

The dynamic role of small- and medium-sized multinationals in global production networks: Norwegian maritime firms in the Greater Shanghai Region in China

Introduction

One of the main features of the current economic globalization phenomenon is the emergence of global production networks (GPNs) that connect multinational enterprises (MNEs) and local regional clusters and networks in many international industries. According to Coe, Dicken and Hess (2008, 274), production networks are defined as ‘the nexus of interconnected functions, operations and transactions through which a specific product or service is produced, distributed and consumed’. Consequently, a GPN is a production network ‘whose interconnected nodes and links extend spatially across national borders and, in so doing, integrates parts of disparate national and subnational territories’. These networks are integrated in the global economy. About 80 per cent of international trade is organized through GPNs (UNCTAD, 2013). Consequently, there has been a shift in the research focus from international trade between national economies to global chains of MNEs and local actors engaged in the production of services and goods (Yeung and Coe 2015).

East Asia has a strong position in GPNs in several industries, which is reflected in a large number of GPN publications based on empirical research on China (e.g. Kim 2011; Wei and Liao 2013; Yang 2013, Li, Kong, and Zhang 2016; Rasiah, Kimura, and Oum 2016) or other countries in the region (e.g. Yeung 2009; Intarakumnerd, Chairatana, and Chaiyanajit 2016). The research on GPNs in general and on GPNs that connect East Asia actors to global partners in particular has greatly increased our knowledge on the characteristics and functions of these production networks. It has also raised some new questions that are still relatively

unexplored, such as how these production networks have emerged and developed, as well as how actors in such networks have connected with each other at the micro-level.

The paper is motivated by three observations in the literature on GPNs. First, GPNs are dynamic and the networks within the GPNs change over time (MacKinnon 2012). However, we still do not know much about how this dynamism works since the previous research on GPNs has paid little attention to their evolution, and especially the evolution in an early period of their history (MacKinnon 2012). Second, the research has shifted from focusing only on the role of local regional institutions in GPNs to also including the strategic behaviour of MNEs that have invested in a region. The role of MNEs is, however, still underexplored (Yeung 2009; Yeung and Coe 2015). Third, in many industries, global lead firms, like Toyota in the automotive industry, have been playing an active role within the GPNs by orchestrating other actors. There has been less focus on the role of small- and medium-sized MNEs in the industries in which global lead firms are absent or difficult to define (Egels-Zandén 2017).

This study explores the dynamic development of an early phase of a GPN within the maritime industry by focusing on how small- and medium-sized MNEs from a Norwegian maritime industry cluster are linked to local actors in a maritime cluster in the Greater Shanghai Region through strategic coupling processes. It addresses the following research questions: What is the role of foreign small and medium-sized MNEs that have invested in the local industrial clusters in the dynamic development of GPNs? How do the subsidiaries of MNEs connect with the local actors and institutions when operating in a host industrial cluster? What role do the subsidiaries of MNEs play in relation to their headquarters in these dynamic strategic coupling processes?

These research questions will be discussed by exploring how the small and medium-sized MNEs connected locally through selecting, changing and combining their operation modes in the host-country (Benito, Petersen, and Welch 2011). The choice of operation modes represents different degrees of local ownership integration, from the wholly-owned foreign enterprises (WOFE) to joint ventures or strategic alliances with local actors. The choice of operation modes evolves in dynamic processes, and MNEs often combine different modes, like WOFE and joint ventures, as well as change their operation modes over time (Benito et al., 2011). Consequently, the choice of operation modes expresses different forms of coupling processes that MNEs can use to connect with local or regional actors in the GPNs.

One contribution of this paper is that it enriches the GPN literature by showing how non-lead firms contribute to creating dynamic GPNs by being active partners in the coupling processes with local or regional actors, institutions and other MNEs that have already established subsidiaries in the host region. This is shown by exploring how incoming small and medium-sized MNEs connect locally through selecting, changing and combining their operation modes. The second contribution is that it connects the literature on the internationalization of maritime clusters to the GPN literature. Several scholars have undertaken research on the formation (Shinohara 2010), identification (Lazzeretti and Capone 2010), development (Zhang and Lam 2013), and strength (Othman, Bruce, and Hamid 2011) of maritime clusters. The maritime industry is, however, one of the most globalized industries. There has been an increasing interest in examining the internationalization process and models of maritime clusters (e.g. Amdam and Bjarnar 2015). To our knowledge, only Notteboom and Merckx (2006) have studied the internationalization of maritime agglomerations within the GPN framework. While their study focused on the shipping industry, the most globalized sector of the maritime industries, this paper looks into a

relatively new but constantly evolving GPN of manufacturing offshore service vessels (OSV). Within the production of vessels that serve the offshore oil and gas rigs, a GPN emerged in the 1990s when oil- and gas activities expanded offshore and the OSV industry was increasingly globalized (Amdam and Bjarnar 2015).

Theoretical perspectives

GPNs are networks that link global actors within the production, distribution and consumption of products and services (Coe, Dicken, and Hess 2008). These networks of actors are more than networks of firms in a supplier-production-consumer-relationship (Levy 2008). The networks are linkages between firms, suppliers, NGOs, labour, institutions and other actors (Egels-Zandén 2017). A key mechanism in the dynamic development of GPNs is the strategic coupling, recoupling and decoupling between regional institutional arrangements and MNEs investing in the region. Within GPNs, the strategic coupling process has the following three main characteristics. First, it is strategic and relies on intentional actions; second, it is space and time contingent; and finally, it transcends territorial boundaries (Coe and Hess 2011). A GPN is consequently dynamic, and the coupling processes change over time through processes of recoupling and decoupling (MacKinnon 2012; Wei and Liao 2013; Horner 2014). Recoupling means strategic renewal and change of the relationship between actors (Nobel and Birkinshaw 1998), including MNEs, local or regional actors and institutions within the region in which the firms make foreign direct investments (FDIs). Decoupling means the processes in which such relationships are terminated, for example, when a firm withdraws from the region (MacKinnon 2012).

The focus in the GPN literature has been on how regional actors and institutions act in the coupling process through different selection mechanisms. According to Yang (2013), the

recoupling and decoupling processes are caused by regional mechanisms that selects or abandon MNEs that enter the host region. On the other hand, MacKinnon (2012) argues that the research has underplayed the power of MNEs entering the region. Strategic coupling processes may be the results of intentional actions and active deliberation by several participants, including both MNEs and regional actors within the GPNs. According to Hervas-Oliver and Boix-Domenech (2013), the GPN literature fails to address the central role of the firm, especially MNEs. Therefore, it is highly important to investigate the behaviour of small and medium-sized MNEs that have invested in the host region when analyzing the coupling processes.

In the cases where the role of MNEs has been raised explicitly, the focus of the GPN literature has mainly been on global lead firms, which occupy dominant positions within certain industries. They are important due to their power that enables them to be effective in ‘orchestrating trans-regional production networks on a global basis’ and drive changes within GPNs (Yeung 2009, 328). However, actors other than global lead firms might also be able to play an orchestrating role within GPNs because they control some core competencies in the GPNs. Parker and Cox (2013) show that in the case of the film industry, small MNEs are able to manoeuvre to powerful positions within GPNs. Empirical research on Taiwanese personal computer firms’ investments in some regions of mainland China indicates that MNEs other than global lead firms may function as drivers of the development of GPNs. According to Yang (2009), the strategic coupling of regional development in mainland China was mainly driven by the various tiers of Taiwanese personal computer firms. The interaction between the parent firms and their subsidiaries played a key role in orchestrating production networks on a global basis. In order to identify where the relevant decisions are made, it is highly important to take into account intra-firm relationships with a special focus on the power relationships between headquarters and subsidiaries (Coe, Dicken, and Hess 2008).

The dynamic coupling processes in GPNs may be understood as the interplay between regional selection mechanisms and the behaviour of MNEs in the host region. This paper investigates the unexplored role of small and medium-sized MNEs in the dynamic development of GPNs in the absence of global lead firms. It explores how the incoming small and medium-sized MNEs connect locally through selecting, changing and combining their operation modes. In the study, we have chosen to study three small- and medium-sized MNEs that have their headquarters in the same Norwegian maritime industrial cluster and subsidiaries in the maritime cluster in the Greater Shanghai Region in China. The Greater Shanghai Region is defined as the Yangtze River Delta region and the Hangzhou Bay Area to Ningbo, East China. The three small and medium-sized MNEs entered the Greater Shanghai Region in an early phase of the formation of a GPN for OSV, and we have studied their dynamic roles in coupling processes with local or regional actors from their first investments in 1997, 2003 and 2006 respectively to 2014.

Norwegian maritime MNEs operating in the Greater Shanghai Region

The sample small and medium-sized MNEs in the study are located in a maritime cluster in the county Møre and Romsdal of Norway. They are members of a maritime industry cluster that manufactures vessels for the offshore oil and gas industry. Although this is a county representing only five per cent of Norway's total population, it is a world-leader in several sectors of the value chain for the production of OSVs, such as design. The MNEs from this Norwegian cluster are relatively well-represented in the emerging economies such as the Greater Shanghai Region, China and Rio de Janeiro region, Brazil.

In 2011, there were 165 suppliers, 14 yards, 15 consulting and design firms, and 19 shipping companies in the maritime industry cluster in Møre and Romsdal, Norway. These

clustered firms employed more than 15,000 employees locally and the turnover reached NOK 47 billion (5.7 billion euros), which was around 50 per cent of the total output of Norwegian maritime industry (Hervik et al. 2012). The cluster is complete by having strong vertical relationships since all parts of the value chain activities are represented, ranging from the basic suppliers to after-sales services as well as shipping companies within the offshore and fishing sectors. In addition to the local Norwegian firms, a small number of large MNEs such as ABB (Switzerland), Rolls-Royce (the United Kingdom), and Vard (owned by the Italian company Fincantieri) not only have business operations but also run global division headquarters in the region. These international actors entered the region from the late 1990s by acquiring local firms that had emerged to become competitive international firms with their high maritime competence and advanced technology.

From the 1970s, the local industry started to manufacture OSVs in addition to the fishing vessels. Since the late 1990s, the maritime cluster has developed into one of the most advanced milieu in the world for the design and production of high-tech OSVs. In 2012, around 30 per cent of the Norwegian offshore fleet was located in this region (Menon 2013). This type of vessel developed rapidly both in terms of the number and technology since the 1970s. The development tended to be driven by the expansion of oil and gas production into the new and often challenging environments of offshore fields around the world. But there were no obvious global lead firms in the industrial sector, which enabled small and medium-sized firms to play a crucial role in the global development, especially of ship design, engineering and equipment.

Norwegians have been present in the shipping community in Shanghai since the late 19th century (Seeberg and Filseth 2000). In 2012, there were about 60-70 Norwegian maritime firms in China, most of which were located in the Shanghai area. They played a leading role in the region especially in the design of offshore vessels. In 1995, the State Council of China

approved the international strategy of Shanghai City to become one of the world-leading maritime centres by the end of 2020. The Greater Shanghai Region has developed a strong and relatively complete port-oriented maritime cluster, with ports, logistics, shipping and shipbuilding activities as its main strengths, and finance, insurance and trade as its main weaknesses (McKinnon 2011). Shanghai's new port was ranked as one of the largest ports in the world in 2011, followed by Ningbo Port in the south of the region. These two ports serve sixteen big cities in the Greater Shanghai Region and connect the regional manufacturing activities to the GPNs through maritime transportation by the leading Chinese and international shipping companies.

Shanghai City is also a hub for the world's leading shipping companies. In 2011, the maritime cluster included China's three largest carriers, COSCO, CSL and Siontrans Shipping, 20 global shipping lines, six international carriers, 630 ship agencies and 350 freight forwarders. China held 33.7 per cent of the world's shipbuilding share in 2011. Some of the largest shipyards in the world are located in the region, like Waigaoqio and Jiangnan. As a norm, these shipyards are state-owned, and they are oriented towards a global market. The total output of Shanghai's shipbuilding industry and related industries reached RMB 56.824 billion in 2009, and exports accounted for RMB 40.497 billion (Shanghai 2010). The region is also strong in some areas of the supply industry, such as steel, machinery and electronics. However, despite the large production volume, China still lies at a relatively lower level of the value chain of global shipbuilding industry.

[Table 1 here]

Norwegian firms are represented within all these areas in the Greater Shanghai Region, which illustrates the recent trend of international networks between industrial clusters in different countries, as observed by Bathelt and Li (2014). As seen from Table 1, Norwegian

firms are especially numerous within financial, legal and management services, the equipment industry and after-sales activities. The number of firms that originate from or have key activities in the local Norwegian maritime cluster as well as the distribution of activities of these firms along the global value chain, shows that the strong position of this maritime cluster in Norway also applies in that of the Norwegian maritime industry community in the Greater Shanghai Region.

Methodology and design

In this paper, we have chosen an explorative approach based on in-depth interviews of managers in three sample companies with their headquarters in the Norwegian maritime cluster located in Møre and Romsdal County. According to Yin (2003), case studies are an appropriate research method when discussing ‘how’ or ‘why’ questions. We focus on explaining ‘how’ some Norwegian incoming small- and medium-sized MNEs are linked up to the regional actors in the Chinese context, contributing to the dynamic development of a maritime GPN. Another reason for making an explorative study based on in-depth interviews of managers of three sample firms is that the total number of companies from Møre and Romsdal County that invested in the Greater Shanghai Region was limited to sixteen at the end of 2012 (see Table 1). By choosing these three Norwegian maritime firms, we had a small population of sample firms that fulfilled the following criteria: All of them had made changes in their operation modes after entering China for the first time, and together they represented all relevant parts of the value-chain activities in the Chinese region (see Table 1). The first sample firm was a typical equipment manufacturer. The second one combined two business activities (equipment and aftersales). The third one was engaged in multiple business activities (agents, designs and engineering, equipment and aftersales). These characteristics

made them representative for the total number of sixteen firms with headquarters in the Norwegian regional maritime cluster located in the Møre and Romsdal County. Finally, these three sample firms also accepted our strict research requirements and invited us to interview top managers at their headquarters in Norway and their subsidiaries in China. In this study, the three sample firms are referred to as *EnDesign*, *Equip* and *Server* respectively.

EnDesign is a small family-owned shipbuilding company established at the beginning of the 20th century. It has diversified its business since the 1960s. In the 1990s, its business activities comprised shipbuilding, ship design and the manufacturing of maritime equipment. In 2011, *EnDesign* was an MNE with 800 employees and with its business activities representing several stages in the maritime value chain. In addition to having a shipyard in Norway, it is primarily a design and engineering company with units in Norway, China (Shanghai City), the Netherlands, Poland and Croatia. The company is also a supplier of electronics and power control equipment for ships through its business units in Norway, China, Singapore, Brazil and Dubai. The design is transformed into ships built by its partner-yards in several countries. Its subsidiary in China is located in Ningbo City, Zhejiang Province.

Equip, a supplier of equipment, was established by the local owners in 1986 to produce toilets for the international shipbuilding market. From the very beginning, it focused on international export by establishing business networks with export agents in the major international shipbuilding countries. In 2011, the company operated with representatives, primarily agents, in 25 countries including China. Currently the company is a global leader in the production of vacuum toilets for ships. One of its manufacturing units is located in Ningbo City, Zhejiang Province.

Server is a supplier of fasteners, tools and sundries to the maritime cluster in the Møre and Romsdal County as well as other clients in the mechanical, construction and furniture industries in the Nordic countries. The company, dating back to the last decades of the 19th century, had 125 employees in 2011. In addition to warehouses in Norway, *Server* also operated a warehouse in Suzhou City, Jingsu Province.

All of the three sample small and medium-sized MNEs are major actors in the Norwegian OSV cluster located in the Møre and Romsdal County. *EnDesign* is a customer of the other two clustered firms. None of them has global lead firm function in the GPN for OSVs. All of them are relatively small with less than 100 employees in China, but given the strong position of the Norwegian maritime industry in the Greater Shanghai Region, their subsidiaries are representative for the research purpose and are suitable for studying the dynamic processes of GPNs from the perspectives of the subsidiaries of MNEs.

Qualitative interviews are well suited to tap into the organizational members' accounts and interpretations (Maitlis 2005). The main data source of this research is 32 in-depth semi-structured interviews of managers in the three sample firms. Fourteen of the interviews (ten interviews in *EnDesign*, two in *Equip*, and two in *Server*) were conducted in English with senior managers in the Chinese subsidiaries by the two Norwegian authors and one Chinese author. The other eighteen interviews took place with top managers at the headquarters in Norway by the two Norwegian authors (nine interviews in *EnDesign*, five in *Equip*, and four in *Server*). Each interview, which lasted from one and a half to two hours, was recorded and later transcribed. These interviews were as part of a research project on the internationalization of Norwegian maritime industry from 2011 to 2014. The interviewees were addressed open questions and asked to reflect on when, how and why they entered China

and later made changes in their operation modes. The data from the interviews were then analysed and discussed in the following sections.

Operation modes and coupling processes

Regarding strategic coupling, when the firms entered the Greater Shanghai Region for the first time, we see in the case of *EnDesign* that the owners had a strong international focus long before it invested in China. Already in the 1970s, it began to produce vessels for export, and established several sales offices, including one in Singapore. In the 1980s, it became an MNE itself by acquiring target firms in Denmark and the United Kingdom. The decision to enter the Chinese market in 2003 should be seen against the background of these international experiences, as well as a crisis in the Norwegian shipbuilding industry's domestic market during 2001–2003. The company managed to turn the loss into profits through internationalization. One of the main reasons the company decided to make investments in China was the rapid growth of the shipping industry in the country, which was one of the fastest growing economies in the world (Warner 2014). The regional institutional arrangement that attracted the company to the Greater Shanghai Region and contributed to the coupling with local actors was most of all the existence of a local partner with which *EnDesign* created a joint venture in 2003 for the production of vessels.

Equip, which was founded in 1986, was an international market-seeking Norwegian maritime firm with a CEO who had a unique interest in the Chinese market. Already in 1980, he was – then as an employee at *EnDesign* – sent to China, as he said, ‘*to see if there were any opportunities for building ships in China*’. The mission did not result in any investment, but it created an international mind-set that supported the decision to enter the Chinese market in 1997. At that time, *Equip* had already international business experiences including export

to many European countries and South Korea. *Equip* chose to use a local agent when entering the Chinese market, which was the same entry strategy adopted by the firm when it had entered other countries.

There were two important regional institutional arrangements that supported the decision to enter the Chinese market through an agent. One was the domestic agent system in China linking international producers to Chinese customers. *Equip* established the contact with one of them through their operations in South Korea. The other was a network of Norwegian maritime suppliers that had already been established in Shanghai City, with several firms from the same regional maritime cluster in Norway. Already in 1984, a group of exporters was set up in Shanghai to promote Norwegian maritime products to the Chinese shipyards. *Equip*, which became a member in 1997, made active use of this organization's network to find an agent.

Server's entry into China was more reactive. The company focused traditionally on the domestic market without having any international ambitions. The main reason for establishing a warehouse in Suzhou City in 2006 was because two of its main clients in the Norwegian maritime industry, which had established their subsidiaries in the region, wanted *Server* to follow them as a high-quality supplier: '*We are careful about internationalization, but when one of our main customers asks us: "Do you want to follow us?", we have to do it,*' one senior manager commented. *Server* entered China by establishing a WOFE as the entry mode. The primary function of the WOFE was, according to one manager, to serve the two Norwegian customers: '*We wanted to follow our best customers and serve them with high-quality (products). We didn't intend to find new customers.*' In addition, the subsidiary should support the headquarters in purchasing products for the product assortment in Norway. The Chinese suppliers produced around 25 per cent of *Server*'s product assortment on contract.

After their first entry into China, the three Norwegian firms gradually integrated into the maritime GPNs through recoupling and decoupling, which also meant several changes of their operation modes. One example is that *EnDesign* dissolved its joint venture after two years when it adjusted its overall international strategy from having their own shipyards towards forging strategic alliances with local shipyards. Instead of building ships themselves in China, top management decided to focus more on new units for engineering and design in the Greater Shanghai Region in addition to forming a new strategic alliance with one local shipyard in Ningbo City. *EnDesign* opened a representative office (WOFE) in Shanghai City with three main functions. The first function was to sell design packages to the Chinese and international ship-owners in cooperation with the allied yard. The second function was to develop an engineering and design centre for the global production of standardized vessels, while the design of the high-end tailor-made vessels should remain in Norway. At that time, *EnDesign* had developed into a ship design company primarily making high-tech OSVs for the oil industry. Typical for this strategy was that each vessel was unique, which required demanding investments in highly competent designers and engineers, originally located in Europe. In order to become less vulnerable, the management team decided to expand into less cost-demanding standardized design and engineering packages for the global market by opening the unit in Shanghai City. The engineering and design unit represented a step towards recoupling by moving some high-competence functions from Norway to China and becoming more embedded in the region through deploying skilled Norwegian engineers who could strengthen the local business relationship with the shipyard by supervising the manufacturing of vessels.

The third function was related to project management and supervision. *EnDesign* had two or three of its employees constantly on site at the shipyard in Ningbo City to follow production. They were advisors to the shipyard so that the ships were constructed according to

the drawings. They were also knowledge brokers who reported almost daily to Shanghai and Norway. They actively screened different kinds of knowledge before the relevant information was transferred back to Norway. Within the organization, the Shanghai unit was meant to have a core function of implementing the organization's strategy for global expansion. Finally, *EnDesign* also expanded its activities by establishing a wholly owned production unit of electrical equipment for its own ships in Ningbo City.

The recoupling process was followed by further recoupling and decoupling. The company decided to close down the design and engineering activities in its Shanghai representative office and instructed it to focus only on sales after three years. A decoupling process took place by moving the key functions of design and engineering back to Norway again. However, the company still adopted the same operation mode. The Shanghai office was strengthened as a marketing unit for sales. The company focused more on its core competence of orchestrating the networks between designer, yards and customers: '*We are the conductor in the networks before the contract is signed. After that the yard is the conductor,*' a top manager at the headquarter said.

Similarly, *Equip* took actions that led to further recoupling. The company had a stable system of distributing its vacuum toilet products to the Chinese shipyards by using the same local agent since the 1990s. The use of an experienced agent was a suitable tool to stay coupled to a GPN including a huge number of shipyards, ship-owners and other actors working in a global market. *Equip*'s position in the Greater Shanghai Region changed when the firm established a joint-venture production unit in Ningbo City in 2007. The establishment was not, however, an attempt to become more integrated with maritime GPNs. Instead, the initiative was undertaken in order to get into the Chinese inland market by producing vacuum toilets for the high-speed trains. In a period when the expansion and upgrading of the Chinese railway system took off, the company witnessed a huge potential market for their vacuum

toilet products in China. The regional mechanisms that led to this new process of coupling was not linked to their networks through their agents, but through *Innovation Norway*, a Norwegian governmental unit to promote internationalization. However, the joint venture was not successful in getting any contracts for the coaches but managed to produce vacuum toilet products for a limited number of locomotives before the agreement was terminated due to the lack of good relationship with the Chinese governmental units.

Server, the third sample firm, went through two processes of decoupling. First, the unit's role in purchasing goods in China was replaced by the management team in Norway, who did this directly by visiting and negotiating with Chinese contractors. The subsidiary in China was mainly engaged with serving the original two industrial clients. *Server* refused to be a supplier to other new clients in the region, regardless of whether they were Chinese or originated from the home cluster in Norway. '*We want to be a reliable partner and a strategic ally for our key customers.*' Gradually, the originally two clients in China began to purchase more and more from Chinese suppliers. This led to the second process of decoupling when *Server* decided to withdraw from China.

[Table 2 here]

Discussion

The dynamism that led to strategic coupling, recoupling and decoupling of the three sample small and medium-sized MNEs was a result of processes both at the regional level in China as well as at corporate level. Regarding regional actors, one type was the local firms that acted as partners in joint ventures. The local partners are often the initiators of joint ventures, a fact noted by one of the interviewees: '*The establishment in Ningbo was spontaneous. We had a good product, but no push to establish here. It was the local company that contacted us to*

produce for trains.' In the three case studies, these joint ventures existed only in an initial phase and were soon dissolved due to lack of trust. '*We didn't know what our partner did when he went out of our doors,*' one manager said. A more sustainable regional actor in the coupling processes was the agent who helped *Equip* to penetrate into the local and global networks. The cost of having a local agent is, however, lack of control. '*It is difficult to control an agent,*' one manager at the headquarter said. The risks of having an agent to make contracts were reduced by developing strong and stable relationships between the headquarters and the main clients who are parallel to the agent's networks.

The constraints that *Equip* met with the high-speed train project in China and the dissolution of the joint venture are typical examples of regional selection mechanisms and abandonment of foreign firms that take place in the host region and create dynamism in a GPN (Yang 2013). Another one is local networks that may constrain or reduce the possibilities for external actors to develop any relationship with existing partners, which was the reason why *Server* closed down its warehouse in Suzhou City and exited from the region. The selection process by local abandonment process was very indirect. The management team experienced that the relationship with its two business partners from their home cluster weakened because the local management team of their key Norwegian industrial clients recruited more Chinese purchasers, and they ordered more and more from Chinese suppliers within their own personal networks rather than from *Equip*. The socialization into the local Chinese community of its key Norwegian industrial clients acted as a driver of decoupling.

The relationships between the headquarters and the Chinese subsidiaries were characterized by a high degree of control from the headquarters. The degree of subsidiary autonomy was relatively weak, except for *Equip*'s agent. Control was exercised by a tight relationship between the decision-making headquarters in Norway and typically one

Norwegian subsidiary manager in China. All of the major decisions such as contracting and local procurement were made in Norway. The subsidiary manager in China had relatively limited autonomy and mainly followed the detailed routines set by the headquarters in Norway.

According to the interviewees, the headquarter-subsidiary relationship was important in two ways regarding the firms' own role in coupling processes. Firstly, the actors interpreted the experiences of foreign subsidiaries differently depending on their positions. As one interviewee said: '*Some argue that we have to learn and improve. Others say we should withdraw.*' Second, in all three sample MNEs, the subsidiary managers tended to become frustrated because their headquarters failed to understand what was going on: '*In the beginning nobody in Norway knew about the factory,*' one local manager in China said.

Regarding the features of external networks between the MNEs and the Greater Shanghai Region as part of a maritime GPN for OSVs, the relationships between the MNEs and their main clients (yards and shipping companies) in the region were mainly based on the maritime services, sales and engineering activities instead of manufacturing activities. The organizational structure with highly-centralized control of subsidiaries made the ties with other regional actors within the GPN vulnerable. This should be considered as a disadvantage for the small- and medium-sized MNEs compared with the global lead firms in the GPNs.

The cluster networks that originated from the home cluster in Norway were of a different kind. First, there were business networks between customers and suppliers. The sample firms did business with each other in Norway, and many customers in China were Norwegian clients from their home cluster. Most of the vessels that were built in China based on the design from *EnDesign* were for a French company with their global maritime headquarters located in the Norwegian cluster. The clustered MNEs have forged and

maintained their business ties over the decades, which has been extended internationally to be integrate into the GPN. '*We have moved the cluster to Shanghai,*' one senior manager said. Still, most of the cooperation related to activities in China took place in the home cluster. '*The units in China do not talk so much with each other. We do the talking back home in Norway,*' a CEO said.

Implications for further research

By entering the Greater Shanghai Region, changing their operation modes, and in some cases exiting from the market, the three small- and medium-sized Norwegian MNEs contributed to the dynamic development of a GPN in the production of OSVs through coupling processes. The dynamism resulted from an interplay between regional selection mechanisms and the MNE's strategy, organization and behaviour, which is illustrated in *Figure 1*. Here, we will elaborate this model and propose that this model on the relationship between regional selection mechanism and the MNE's strategic behaviour in coupling processes should be tested on a more robust dataset.

Regarding the regional selection mechanism, the role of formal institutions, like political regulation, was modest and the climate for FDI in the maritime industry in China has in general been favourable. The challenges that one of the MNEs met when it tried to expand from the maritime sector to the inland high-speed train industry illustrates the informal aspects of non-market institutions in emerging countries like China, where contracts are not only decided by formal legislation and procedures, but also by political and social networks as an informal institution. The case studies in the paper indicate that both the market and the business partners played a major impact in forging and developing the maritime GPN. Two of

the sample small- and medium-sized Norwegian MNEs were present in the region because they tried to enter a complex emerging market where Chinese, Norwegian and international ship-owners agreed to use the shipyards in the Greater Shanghai Region. The third one followed Norwegian business partners to China and continued to maintain their business relationships. The complexity of the emerging market gave the MNE more space for manoeuvring when the ties to the local business partners, which had played a major role for entering the region, were broken.

[Figure 1 here]

Regarding the MNEs' actions to manoeuvre within the space that the regional arrangement offered, it did matter if the small- and medium-sized MNE had a proactive strategy to find new solutions (i.e. operation modes) when they met with severe challenges or had a reactive one and exited. Another element in the compound system of interplay between regional arrangements and MNEs' strategic behaviour was their skills in absorbing the signals from the regional context, if their partnerships were dissolved due to the lack of trust and failed to adapt to the local context accordingly. Furthermore, the capability of adaption depended on the position of the MNEs' subsidiaries in relation to their headquarters. The case studies indicate clearly that the subsidiaries of small- and medium-sized Norwegian MNEs had a relatively low degree of autonomy and limited power to exert any adaptation without firm support from the headquarters. Therefore, it could be argued that a higher degree of autonomy for the subsidiaries would have had an impact on subsidiaries adaptation to the local market. Finally, the existing networks from the home-cluster also influence the MNEs' capability to participate in the strategic coupling processes of the GPN, either by using the same agents as other Norwegian MNEs when entering the emerging market, or indirectly through launching new initiatives or maintaining their previous business ties with their former

Norwegian clients, which had a relatively strong position within the GPN as producers of key maritime equipment for the vessels.

Limitations and Future Research

Since the research is based on the in-depth studies of three small- and medium-sized Norwegian MNEs, albeit representatives of a maritime country that have a strong position within the GPN for OSV production, some of the research findings might not be generalizable in some local contexts. However, the model developed in the research paper on the relationship between regional selection mechanism and small- and medium-sized MNEs' strategic behaviour in the coupling processes can be possibly tested on a more robust dataset.

Conclusions

The maritime industry, like many other industries, has witnessed a rapid development of GPNs with strong regional anchoring and global connections in the past decades. In a global economy where East Asia has achieved a stronger economic position, China and other emerging markets in the region have become important nodes in these production networks. GPNs develop over time through coupling, recoupling and decoupling between regional actors and MNEs. While most of the literature on GPNs has focused on how regional actors and institutional arrangements have contributed to these strategic coupling processes, this paper has focused on the dynamic role of small- and medium-sized MNEs in the GPNs with no obvious global lead firms. We argue the regions in emerging markets have selection mechanisms that have high impacts on the coupling, recoupling and decoupling processes. The regional actors, like business partners and governmental institutions, also contribute to

integrating the small- and medium-sized MNEs with some GPNs by initiating the business contacts with the host region. However, lack of trust and local networks can exclude the subsidiaries of small- and medium-sized MNEs and result in the recoupling and decoupling processes with local or regional actors.

The strategic behaviour and intra-firm relationships of small- and medium-sized MNEs have been of decisive importance for the dynamic coupling processes within GPNs. Their attempts to be accepted locally in the emerging market and gain a position in the formation and development of GPNs are expressed in how they have changed their operation modes in the host country, in this case in China. The power of MNEs to orchestrate the coupling processes is, however, moderated by the following two factors that have not been highlighted in the existing literature. First, business networks from the MNEs' home region act as an institution that contributes to the coupling processes in the host region where they have invested. Second, the power relationships between headquarters and subsidiaries are important for the action of the subsidiaries in their foreign context (Ambos and Birkinshaw 2010).

In our cases, all the subsidiaries have had a low degree of autonomy. A higher degree of subsidiary autonomy would have resulted in another story of a dynamic development of GPNs. Based on this, we have suggested a model for analyzing the interplay between regional institutional arrangements and MNEs' strategic behaviour in the coupling processes.

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Table 1. The number of subsidiaries of Norwegian maritime firms in Greater Shanghai

Region of China in 2012. Representation in different parts of the maritime value chain

	<i>In total</i>	<i>Brokers, agents, consultants, legal classification, and financial services</i>	<i>Engineering and design</i>	<i>Equipment</i>	<i>Yards</i>	<i>Aftersales</i>	<i>Shipping companies</i>
Norwegian subsidiaries in total	44	14	6	23	2	18	6
Norwegian subsidiaries with headquarters or core activities in Møre and Romsdal County of Norway	16	3	3	10	0	9	0

Notes: Some companies have many activities.

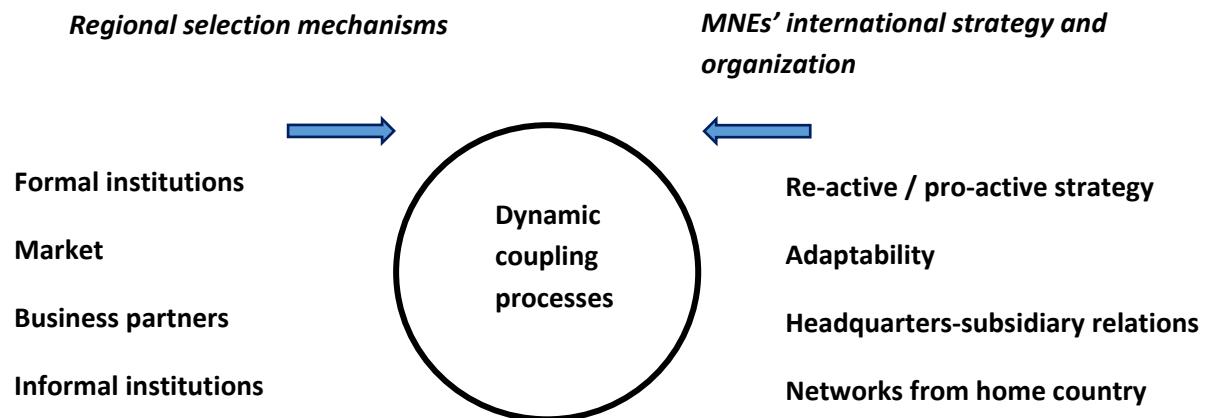
Sources: Website of Norwegian Business Association Member and firms' websites. December 2012.

Table 2. The coupling, recoupling and decoupling of three Norwegian maritime firms in the Greater Shanghai Region.

Firm	Process	Object	Entry strategy	Relation to local actors in YRD	Relation to Norwegian customers in YRD	Relation to global customers	Relation to headquarter
<i>EnDesign</i>	Coupling	Production	Joint venture	Through partner	Direct to customers	Direct to customers	Direct control
	Recoupling Unit I	Design Sales Project management	WOFE	Through strategic alliance; direct to local customers	Direct to customers	Direct to customers	Direct control, some autonomy
	Decoupling Unit I	Sales	WOFE	Direct to local customers	Direct to customers	Direct to customers	Direct control
	Recoupling Unit II	Production	WOFE	Some contact with suppliers	None	None	Direct control
<i>Equip</i>	Coupling	Sale	Agent	Through agent	Direct to customers	Direct and indirect to customers	Contract based; some autonomy
	Recoupling	Production	Joint venture	Through partner	None	None	Direct control
	Recoupling	Production	WOFE	Some contact	Some	Some	Direct control
<i>Server</i>	Coupling	Sale Purchasing	WOFE	Direct to suppliers	Direct to customers	None	Direct control
	Recoupling	Sale	WOFE	None	Direct to customers	None	Direct control
	Decoupling	Closed down					

Sources: Compiled by the authors.

Figure 1. The interplay between regional selection mechanisms and MNEs in dynamic coupling processes



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