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**„Internationalization of East Asian High-Technology MNEs:
Comparing Japanese and Chinese Market Entry Strategies in the
European Market“**

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List of Abbreviations

ARC	Air-conditioning Research Center
CFC	Chlorofluorocarbons
DENV	Daikin Europe N.V.
DETC	Daikin Electronics Technology Center
EDC	European Development Center
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
HFC	Hydrofluorocarbons
HVAC	Heating Ventilation Air Conditioning
JETRO	Japan External Trade Organization
JV	Joint Venture
KACE	Kansai Association of Corporate Executives
M&A	Merger and Acquisition
METI	Ministry of Economy, Trade and Industry
MIIT	Ministry of Industry and Information Technology
MNE	Multinational Enterprise
MOFCOM	Ministry of Commerce of the People's Republic of China
MOFTEC	Ministry of Foreign Trade and Economic Cooperation
NPISH	Non Profit Institutions Serving Households
OBM	Original Brand Manufacturer
OECD	Organisation for Economic Co-operation and Development
OEM	Original Equipment Manufacturer
R&D	Research and Development

RoHS	European Commission Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment
SMI	Sumitomo Metal Industries
UIP	Uppsala Internationalization Process
UK	United Kingdom
UNCTAD	United Nations Conference on Trade and Development
US	United States
USD	United States Dollar
VRF	Variable Refrigerant Flow
VRV	Variable Refrigerant Technology
WEEE	European Commission Directive on Waste Electrical and Electronic Equipment
WOS	Wholly-Owned Subsidiary

1 Introduction

1.1 Research Question

In the spring of 2018, the German Newspaper WirtschaftsWoche published an article with the title „European industry under China’s thumb”, reflecting the growing fear of Chinese domination over the European economy within political, economic and academic circles ("European Industry under China's Thumb," 2018). This declaration of fear over China, or of Chinese businesses threatening to take over the European business world, is hardly the first time Europeans have felt substantially threatened by an emerging economic power from Asia. During the 1980s, western academics warned the public about Japan as a threat to the West ("Not Just Another Fake," 2010; Porter, 2005). This fear proved unfounded as the years passed (Porter, 2005).

The research interest in this thesis has grown out of an interest in recent Chinese economic activities in the European Union and the extensive and often sensational media coverage of the topic. The noticeable similarities between the perceived threat of an East Asian¹ nation taking over Europe in the 1980s, and the current news coverage, as well as the distinct focus on technology-intensive sectors of the economy, provide fertile grounds for a comparison. Further, the concerns of European policymakers over their relationship with the East Asian business world, given the expansion of East Asian multinational enterprises (MNEs) in the European technology sector, spark an interest in the topic. The question arises whether there is, in fact, evidence that Chinese high-technology firms are following similar or distinct patterns of market entry strategies compared to Japanese high-technology firms, decades earlier, in their approaches to entering the European market. With the help of an eclectic framework derived from various streams of internationalization research, this thesis, therefore, arrives at the following research question:

What similarities and differences can be observed in the international market entry strategies of Japanese and Chinese high-technology MNEs in the European Market?

1.2 Relevance

The topic of East Asian internationalization strategies in the European market² is highly relevant for several reasons. At the level of national policy, policymakers on the European side need to understand how to deal with the perceived threat of East Asian take-overs and technology loss. They also need to understand how to use foreign direct investments (FDI) as

¹ East Asia in this thesis is defined as the eastern part of the Asian continent, including China and Japan.

² The European market is defined as the aggregate market of the current 28 member states of the European Union.

an asset for sustainable economic development and technological advancement. For Asian latecomer firms entering the developed markets of the European Union, this thesis provides an insight into entry strategies, which have already proven themselves useful for the development of a market presence in Europe. The analysis of country, industry and firm-level factors of market entry strategies facilitate the identification of underdeveloped capabilities, which can actively be targeted in the economic policymaking of latecomer countries. On the level of the individual firm, especially in the high-technology sector of latecomer countries, this thesis could further provide an anchor point for comparing strategies of successful European market entry and offer support for choosing market entry strategies which exploit existing capabilities, while building new ones. Firms new to the European market might better understand upcoming challenges, based on the Japanese and Chinese experience, and use this as a basis to develop early coping strategies for the future. Lastly, this thesis adds to the study of internationalization by contributing case-level evidence on East Asian home appliance firm's market entry into the European Union. By comparing the differences and similarities in Japanese and Chinese home appliance firm's market entries, arguments in favor of distinct East Asian internationalization patterns can either be supported or discarded. The collected evidence can then be used to add to the theoretical development of internationalization studies by participating in the ongoing debate on sequential firm internationalization in developed markets.

1.3 Approach

This thesis follows a comparative case study approach on two high-technology MNEs in the home appliance sector of Japan and China, which have entered the European market at different points in time: Daikin Industries, Ltd. and Midea Group. To answer the research questions of commonalities and differences in market entry strategies of East Asian MNEs, this thesis constructs an eclectic framework of analysis founded on the industry-based, resource-based and institutional views of internationalization theory. It also takes new theoretical additions like network theory and entrepreneurship into consideration. Country, industry and firm data are collected from databases, firm reports, secondary literature, websites, etc. This data serves to compare market entry strategies in their time-specific country and industry context, moving on to a qualitative analysis of text data on market entry strategies and firm-specific capabilities. The findings for each case are compared to each other, with the expectation of revealing their similarities and differences. The thesis then goes on presenting the most important findings, discussing the theoretical implications of the findings, clarifying shortcomings of the research and proposing further research in the field of East Asian internationalization strategy.

2 State of the Art

2.1 The Concept of Internationalization

Internationalization can very broadly be defined as “the process of increasing involvement in international operations” (Welch & Luostarinen, 1988, p. 36). Internationalization processes can be explored on various levels of analysis: country-level, industry level, organizational level or at the level of the individual entrepreneur (Andersson, 2000; Yasushi, 1992). The first studies on internationalization in the 1970s are rooted in the location models of Adam Smith, David Ricardo, and Heckscher-Ohlin. Smith (1776) developed the idea of absolute cost advantage, arguing that countries should specialize in the export of goods, which they produce at a lower cost than their trading partners. Ricardo (1817) added that instead of absolute cost advantage, a comparative advantage in production could be mutually beneficial for trade among countries. Based on Ricardo’s work, the Heckscher-Ohlin model introduced the concept of factor endowments, explaining the advantage of exporting products corresponding to locally abundant production factors and labor conditions (Baldwin, 2008; Ohlin, Hesselborn, & Wijkman, 1977).

2.2 Country-Level Internationalization

2.2.1 Product-Life-Cycle Theory

Based on Heckscher-Ohlin, Vernon (1966) introduced “International Product-Life-Cycle Theory” arguing that products are subject to predictable changes and that information flows are restricted across borders. These premises affect internationalization strategies at the firm level. Foreign production becomes a strategy to gain ownership-specific advantage over rivals (Dunning, 2001). The model further assumes that the production process is characterized by cycle changes over time, economies of scale and divergent tastes in different countries. Entry into a foreign market is described as a process, which involves a specific pattern of successive stages. First (1), the innovative product is manufactured and sold in the home market. With time, market penetration and output volume increase, as does the number of firms producing the innovation in the home market. In the next stage of the cycle (2), foreign consumers demand the innovation come to their market and export of the product begins. In the maturity stage of the cycle (3), export rates increase, while growth in the home market slows down. As the prices for the matured product fall in the home market, the firm increases market volume and sales in the foreign market. Finally (4), the firm starts to establish foreign production. Eventually, the product is fully imported from the foreign production site into the home market. This is the final

stage of decline in the product-life-cycle, which is restarted once the firms of the home market launch a new innovative product (Glowik, 2016; Vernon, 1966).

Product-life-cycle theory is important for studying market entry, as it develops the idea that country-level conditions influence strategies at the firm level. This became the foundation of the classic internationalization schools of Uppsala and the eclectic paradigm. These schools adopted the idea of process patterns of internationalization (Johanson & Wiedersheim-Paul, 1975; Yang, Lim, Sakurai, & Seo, 2009) and the link between locational advantages and firm strategies (Dunning, 2001). The theory also focuses on the characteristics of the product in determining how firms internationalize. The theory is most criticized for lacking explanatory power for industries of standardized goods and rapid technology changes (Martin & Salomon, 2003; Vernon, 1979). It also is ill-fitting for less-developed countries (Vernon, 1966).

2.2.2 Latecomer Economies and the Life-Cycle Theory

The assumptions of limited information flow in life-cycle theory no longer hold up with modern communication technology and with newly internationalizing countries entering the business stage (Vernon, 1979; Yang, Jiang, Kang, & Ke, 2009). Based on the “Flying Geese Model” by Akamatsu (1962), the concept of latecomer dynamics argues that countries who suffer from their status as “latecomers”, may choose an early entry strategy to profit from “fast-follower industrial dynamics” and “fast-follower innovation” (Mathews, Hu, & Wu, 2011). They enter new markets at an accelerated pace compared to western firms. Firms from emerging economies are more likely to experience a relative disadvantage in the global business environment compared to their developed economy counterparts. For this reason, they seek to enter developed economies with the aim of developing globally competitive knowledge bases and to acquire technological capabilities (Cantwell, 2015). The concept of “latecomers” describes firms, which enter new markets with the intent to “catch-up” with the know-how and technology of firms from more strongly developed economies. Firms intend to develop their business environments, improve international competitiveness and to operate in global markets (Boateng, Qian, & Tianle, 2008, p. 266; Hoskisson, Kim, White, & Tihanyi, 2004; Wesson, 1999). While country-level studies on internationalization trajectories of emerging economies are critical for studying market entries of East Asian firms, country-level perspectives alone are limited in explaining internationalization strategies of firms.

2.3 Industry-Level Internationalization

2.3.1 The Industry-Based View

The industry-based view focuses on the competitive advantage and the competitive position of a countries' industry in the global market (Porter, 1990; Rui & Yip, 2008). An industry is defined as a cluster of firms, which share similar organizational structures, strategies regarding their products, missions and value-added activities. The industry environment directly influences the competitive position within the industry and the market entry strategies of firms. It should be considered next to country-level factors of internationalization in strategy analysis (Glowik, 2016; Wu & Zhao, 2007).

2.3.2 Porter's Diamond Model of International Competitiveness

In his "Diamond Model of International Competitiveness" Porter (1980; 1990) isolates threats and opportunities for firm internationalization and develops a framework for analyzing the attractiveness of a countries' industry. Industry-specific factors of the model deal with industry structure, industrial policies and industrial competition (Porter, 1990). Understanding internationalization at the industry level is important because firms adopt global strategies, which match domestic industry conditions (Dunning, 1981; Porter, 1980; Yang, Jiang et al., 2009). For this reason, industry structure and characteristics should be included in the analysis of firm market entry strategies.

Industry-based models have several shortcomings. For one, competitive advantages within an industry are not easily quantifiable and difficult to test. Industry-based models further analyze domestic industries, neglecting the internationalization factors outside of the home country. They fail to explain how firms may take advantage of better industry characteristics abroad (Glowik, 2016; Grant, 1991; Narula & Verbeke, 2015). Notably, industry-based viewpoints also treat firms within one industry as identical regarding their resources and strategies. This means that industry-based approaches are not highly advantageous to the analysis of firm strategy variance (Barney, 1991). They are problematic as the solitary theoretical lens for this thesis.

2.4 Firm-Level Internationalization

2.4.1 The Concept of the Firm

As evident from country-level and industry-level theoretical approaches, the firm is a crucial focus point for the study of internationalization strategies. The business firm is defined as "the

basic unit for the organization of production” (Penrose, 1959, p. 8). Firms are complex institutions, which comprise diverse activities, make a variety of decisions and are influenced by imperfect and unpredictable human behavior. In a private enterprise industrial economy, most economic activity is channeled through firms (Penrose, 1959). Although there is much debate as to what defines a high-technology firm (Aydalot & Keeble, 2018), they are understood throughout this thesis to be firms, which are part of the broader electronics industry and center their value-adding activities around computer hardware components, electronic displays, audio, micro-electric components, and electronic home appliances (Glowik, 2016). A special type of a firm, which has been the central subject of internationalization studies, is the multinational enterprise (MNE)³.

2.4.2 The Theory of the Multinational Enterprise

Market imperfection theory postulates that markets are imperfect and produce costs for the firm. Costs interfere with rational market decisions. MNEs are created to overcome the costs of market imperfections (Caves, 1971; Hymer, 1976; Kindleberger, 1969). Contrary to the assumptions of the industry-based view, firms engage in foreign countries to take advantage of the returns that their capabilities allow them to earn and to remove competition between themselves and the competitors of the target market (Hymer, 1976). Simultaneous to market imperfection theory, Buckley and Casson (1976) and Hennart (1982) developed theories of the MNE, based on the transaction cost approach of Coase (1937) and Penrose (1959). Coasean transaction cost theory established that firms allocate factors of production to different usages based on price mechanisms (Coase, 1937). Coase argues that firms improve their efficiency through vertical and horizontal integration of institutional arrangements (Dunning, 2015; Narula & Verbeke, 2015). Rugman (1976) and Hennart (1982) developed the premises of transaction cost theory into internationalization theory. They argue that internationalization generates MNEs because firms possess ownership-specific advantages, like knowledge, which they would rather allocate within their own organization than transfer them across national boundaries (Dunning, 1988). Forming an MNE adds value to the organization through the exploitation of national or regional differences, where the MNE combines its firm-specific advantages (FSAs) with the host-country-specific advantages (CSAs) (Rugman & Verbeke, 2004). Buckley and Casson (1998)’s “Model of the Multinational Enterprise” later became the

³ The term “Multinational Corporation” (MNC) is simultaneously used throughout literature, basically referring to one and the same concept. The MNC is the earlier version based of Penrose (1959)’s work, while “MNE” is the more popular term since Rugman (1980)’s „New Theory Concerning the Multinational Enterprise“.

essential theoretic background for firm-level studies of MNEs. Based on this theory, an MNE is a firm engaging “in foreign production and [...] thereby active in the goods and factor markets of many nations, rather than in one” (Rugman, 1980, p. 24). A typical MNE engages in international production and has subsidiaries in six or more nations, of which one generates income through its activities (Rugman, 1980). The theory of the MNE does not only provide an understanding of why MNEs emerge and how they can be characterized, but it also provides a crucial basis for identifying country-level factors and firm-specific factors, which influence the choice of market entry strategies of the firm. Especially country-specific advantages and firm-specific advantages must be considered in the construction of the framework of analysis.

2.4.3 Resource-Based View

Firm-specific-advantages are captured in the resource-based view, which focuses on the internal resources and capabilities of the firm (Barney, 1991; Wan, 2005). Ricardo’s comparative advantage here becomes the competitive advantage of the firm, which generates value out of the potential inner resources and external resources of the firm (Barney, 1991; Wernerfelt, 1984). One of the most commonly cited models, combining resource-based view with location concepts and internationalization theory, is Dunning’s “Eclectic Paradigm” or “OLI Model”. The OLI model is based on transaction cost theory and states that internationalization occurs when the transactions costs of the market are higher than transaction costs within the organization. To Dunning, the most important factors for explaining firm internationalization are ownership, locational advantages and internationalization advantages. Firm investment abroad is possible due to internationalization and ownership advantages. They are conducted to exploit location advantages. Ownership advantages entail factors like brand recognition, firm-owned technology, management know-how, marketing know-how, financial strength, and product differentiation. Internationalization advantages are the organization structures allowing the internalization of cross-border transactions, like scale effects and technological intensity (Li, Tallman, & Ferreira, 2005). Locational advantages refer to the economic and institutional home and host-country conditions providing cost advantages (Athreye & Kapur, 2009).

Resource-based views are more suitable to study firm strategy variance than industry-based views, as they argue that firms within the same industry have different resources and therefore may adopt different strategies (Barney, 1991). Their static approach to internal resources and capabilities of the firm fails to account for how strategies change as capabilities are accumulated over time (Chang, 1995; Fitzgerald & Rowley, 2016b; Vernon, 1985). Further, the eclectic paradigm experiences difficulties when confronted with inter-firm networks, which defy its

concept of strictly defined firm boundaries (Fitzgerald & Rowley, 2016b). In reaction, Dunning (2001) suggests including dynamic firm development from industrial organization theory (institutional theory) and the economics of entrepreneurship. For this reason, one must also consider the institutional view for analyzing dynamic processes and changes in market entry strategies of the firm (Glowik, 2016).

2.4.4 The Institution-Based View and the Uppsala Internationalization Process Model

The institutional view emerged from organizational theory and focuses on processes within the organization, such as learning (Barkema & Vermeulen, 1998; Voss, Buckley, & Cross, 2010; Ying, Ping, & Yang, 2016). The most prominent framework of the institutional view, the Uppsala Internationalization Process Model (UIP), is rooted in Carlson (1966). Carlson argued that firms expanding abroad are shaped by uncertainties and that foreign risk and control over foreign operations are central parts of firm internationalization. This led the way to Johanson and Wiedersheim-Paul (1975)'s observation of gradual internationalization. In the model, a firm chooses the location of a foreign market entry and the degree of its commitment to the new market according to its perceived liability of foreignness in the new market. Perceived liability of foreignness is shaped by the possession or lack of local market or institutional knowledge (Forsgren, 2002; Johanson & Vahlne, 1977). Firms may experience language and cultural differences between countries as potential obstacles for international business development. This barrier to the foreign market is referred to as psychic distance, which is made up of factors such as political system, language, culture and other factors disturbing information flows between the new market and the firm. Uppsala scholars argue that firms prefer internationalizing in foreign markets with lower geographical distance, where they experience lower market uncertainty (García-Canal, Duarte, Criado, & Llana, 2002; Johanson & Vahlne, 1977; Welch & Luostarinen, 1988). Firms gain market knowledge while operating in foreign markets, consisting of information on supplier and customer characteristics, cultural aspects of market knowledge and competition structures. Market knowledge is a unique and non-transferrable resource. Firms make decisions about commitment to foreign markets based on market knowledge, resources, foreign market stability, and international experience. The decisions made about committing resources to foreign market are abbreviated as commitment decisions. As the firm's market experience increases, firms follow a sequential pattern of market entry strategies with increasing market commitment (Johanson & Vahlne, 1977).

2.4.5 Organizational Learning, Latecomers and Network Theory in the UIP

The UIP model has been criticized for a number of reasons, leading to several updates of the model (Vahlne & Johanson, 2013). First, the traditional UIP considers the entry into geographically distant markets as the result of an organizational learning feedback loop, which needs to start in foreign markets with small psychic distance. This fails to explain the phenomenon of latecomer firms entering countries of great psychic distance. Based on the insights of modern network approaches, Holmes, Hoskisson, Kim, Wan, and Holcomb (2016) provide insight into the business group perspective of firms and highlight the importance of their existence for late-industrializing countries. The updated UIP considers business environments as manifestations of networks. In these network dynamics, the concept of psychic distance is replaced by the concept of outsidership to the network (Johanson & Vahlne, 2009; Vahlne & Johanson, 2013). Through an extended selection of market entry strategies, which move beyond pure self-learning, firms are able to interact with a variety of market actors and build knowledge networks, which help overcome outsidership to certain business networks and will help them enter new markets (Glowik, 2016, p. 68; Rugman & Verbeke, 2004). Dunning (2015) also observes a trend of analyzing inter-firm alliances through the lens of industrial networks, which allows MNEs to enjoy information network externalities and arbitraging advantages (Rugman & Verbeke, 2004). As mentioned by Dunning (2001), the theory of entrepreneurship helps explain how one or more entrepreneurs, with decision making power, catapults the firm into an advanced stage of internationalization through his or her prior international experience (Jones & Coviello, 2005). This idea is linked to the theoretical concept of latecomers and adapted to the more current situation of the global business world. The updated UIP argues that firms will use sequential market entry strategies to strengthen business network relationships and to overcome barriers to outsidership and learning (Johanson & Vahlne, 2009). The discussed criticisms of the UIP model clarifies the necessity of a more eclectic approach towards internationalization strategy, which uses the current streams of internationalization research and specifically concentrates on East Asian cases.

2.5 Market Entry Strategies

2.5.1 The Concept of Market Entry Strategy

Chandler (1962) defines strategy as “the determination of the basic long-term goals and objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out these goals” (p. 13). Li and Gammelgaard (2014) define

internationalization strategies as “the managerial decisions made regarding the utilization of an international business opportunity, either in the form of an increased commitment to existing foreign markets or as an entrance into a new foreign market” (p. 153). This definition here is perceived critically, since it implies that strategies may only increase in commitment, without ever declining in their commitment (Mathews, 2006). There seems to be little unity across the field of internationalization studies as to what covers market entry strategy since the term is commonly interchanged with the term “market entry mode”. Market entry strategy in this thesis is defined as a broad construct, which describes the choice of the fitting market entry modes for international market transactions for a specific period of time corresponding to country, industry and firm factors (Glowik, 2016; Osland, Taylor, & Zou, 2001).

Research on market entry strategies first dealt with market entry strategies of developed country firms entering developed countries and developing countries (Chandler, 1980; Delios & Henisz, 2003; Hanson, Mataloni Jr, & Slaughter, 2001; Johanson & Wiedersheim-Paul, 1975; Luo, 1998; Peng & Delios, 2006). Research then extended to studies of market entry by developing country firms first into developing countries and later into developed countries (Duanmu, 2012; Fitzgerald & Rowley, 2016a; Kogut & Singh, 1988; Kotabe & Kothari, 2016; Ozawa, 1979; Yuan et al., 2016, 2016).

Among East Asian MNEs, Japanese firms first became the center of latecomer market entry strategy studies (Belderbos, 2003; Delios & Beamish, 1999, 2005; Delios, Gaur, & Makino, 2008; Delios & Henisz, 2003; Geringer, Tallman, & Olsen, 2000; Henisz & Delios, 2001; Lu, 2002; Ozawa, 1979). China followed as the subject of a variety of country-level studies on emerging economy and latecomer internationalization (Boateng et al., 2008; Deng, 2003, 2012; Hong & Sun, 2006; Luo, 1998; Schüller & Turner, 2005; Ying et al., 2016).

As more East Asian firms entered the international business stage, comparative firm-level case studies sought to establish specific characteristics of East Asian MNE internationalization and market entry strategies. Japanese market entry strategies were described as sequential entry strategies, which show some basic similarities with the stages of the UIP model (Chang, 1995; Delios & Henisz, 2003; Hemmert & Jackson, 2016). Institutional theory was popular to explain Japanese entry mode choices beyond the arguments of transaction cost approaches (Lu, 2002). Chinese MNEs also follow a distinct pattern of entry strategies in comparison to other developing countries (Cui & Jiang, 2009; Hong & Sun, 2006; Zhang & van den Bulcke, 1996). They typically move from indirect exporting to direct exporting of their products. They then engage in inward-oriented activities with firms from advanced economies, like joint ventures,

followed by the setting up of first subsidiaries. Since the 1990s, Chinese firms increasingly set up subsidiaries abroad and listed with foreign stock exchanges. Mergers and acquisitions (M&As) later became the most important form of investment for Chinese firms (Yang, Jiang et al., 2009; Yu & Drauz, 2013).

Looking at comparative studies of East Asian countries, Rugman and Li (2007) find that Japanese and South Korean MNEs share similarities in geography, culture and institutional environments with Chinese MNEs. The importance of being affiliated with business networks is important in both Japanese and Korean MNEs (Oh und Rugman 2007). In Japan for instance, business networks called “zaibatsu” linked together firms from mining, manufacturing, banking and trading since before the Second World War (Buckley, 2004). South Korean and Chinese MNEs share similarities in internationalization motivations and in the role of government industrial policies (Yang, Lim et al., 2009). Several comparative case studies between Japanese and Chinese MNEs find similarities in Japanese and Chinese technology firm expansion in the western markets. One single case study found that Chinese firm Haier had, similarly to Japanese Matsushita during the 1970s, strategically channeled FDI into research and development (R&D) units in developed countries (Yang, Jiang et al., 2009). Japanese and Chinese MNE internationalization also shares some similarities in organizational structure and state-business relationships. Both countries’ MNEs share a tendency towards a centralized corporate structure with the headquarters at the top of the decision-making process. The role of the institutional environment is also similarly important in both countries, as close state-business relationship were linked to their internationalization processes (Yang, Jiang et al., 2009). Differences between China and Japan were risk-taking and flexibility in the foreign market, cost-reduction motives, asset-seeking motives and market size motivation (Oh & Rugman, 2007; Yang, Lim et al., 2009). Boisot and Meyer (2008) support the argument that China will follow a similar trajectory of internationalization, as seen in Japan, building on already existing technology and institutions. Hemmert and Jackson (2016) demonstrate that internationalization patterns of East Asian countries only superficially converge and differ strongly in the strategic behavior of the individual firm.

2.5.2 The Framework for Market Entry of High-Technology Firms by Wu and Zhao

Internationalization is highly complex, as demonstrated in the preceding review of East Asian firm internationalization. Country-level factors, industry factors and organizational factors of the firm all influence the market entry strategies of internationalizing firms (Kogut & Singh, 1988; Osland et al., 2001). Wu and Zhao (2007) built a framework based on the entry strategies

of Chinese high-technology firms, displayed in Figure 1. They argue that industry structure and characteristics combined with environmental factors are influenced by firm factors, like strategy, experience, firm-specific advantage, to determine the characteristics of market entry strategies. These characteristics are analyzed according to control, dissemination risk, resources, flexibility, and ownership. Entry mode choice is influenced by the moderator factors of government policies, corporate policies, firm size, and home-country technology reputation. Their framework is built on the conditions of the high-technology sector and unifies factors of country, industry, and firm-level in one model. For these reasons, it serves well as the basic structure for the framework of analysis of this thesis. It lacks significantly in theoretical consideration and operationalization and needs to be extended to include the most important variables as derived from the main branches of internationalization theory. Further, Wu and Zhao's moderator effects are not adequately discussed otherwise in internationalization literature. Instead, country, industry, and firm-level factors are commonly perceived as moderators of market entry strategy, as they all influence entry mode choice (Luo, 1999; Upitz, 2013; Xie, Reddy, & Liang, 2017). Government policies here are considered as a part of the political environment and firm size as a firm factor. There is too little supporting scientific evidence at the present time to justify the inclusion of corporate policies and home-country technology reputation in this thesis' framework of analysis.

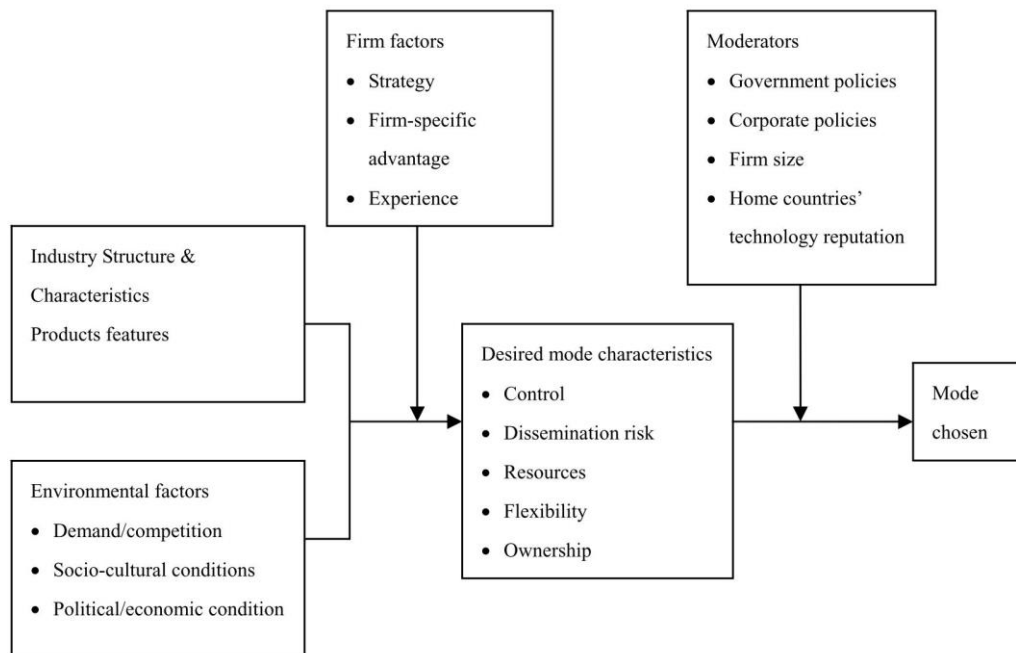


Figure 1 Foreign Markets Entry Mode Framework for Hi-Tech Firms (Wu & Zhao, 2007, p. 193)

2.5.3 Country-Level Factors

Country-level locational factors play a crucial role in the locational model of Heckscher-Ohlin and strategies have been determined to change, as environmental factors change (Chandler, 1962). In the eclectic paradigm, locational advantages of the country are analyzed separately from ownership advantages of the firm, but both are intertwined in producing market entry strategies (Dunning, 1988, 2000; Rugman & Verbeke, 2004; Stoian & Filippaios, 2008). The idea of locational factors is also represented in the form of domestic factor conditions in Porter's diamond (Porter, 1990). Japanese and Chinese market entry strategies have been strongly linked to host-country conditions (Anand & Delios, 1996; Makino, Beamish, & Zhao, 2004; Pak & Park, 2005; Yang, Lim et al., 2009). Japanese and Chinese MNEs were exposed to different conditions in the international institutional and economic environment at the time of their market entry, which explained variance in entry modes, location choice, and management practices (Fitzgerald & Rui, 2016). Environmental factors are divided into the categories of demand and competition, socio-cultural conditions and political and economic conditions (Wu & Zhao, 2007).

Demand conditions are shaped by the market demand for products and services (Porter, 1990). In the home market, high demand leads MNEs to grow internally, develop capabilities and move abroad, while strong foreign demand fosters internationalization (Chandler, 1980; Luo, 2002; Pak & Park, 2005; Stoian & Filippaios, 2008). Market size of the host country is an indicator of the type and commitment of market entry modes. Acquisitions are more likely in large markets and contractual entry modes are more likely in small target markets (Root, 1994; Xie et al., 2017). Large, growing markets are more dynamic and attract market entries (Xie et al., 2017). Latecomer firms put a strategic emphasis on identifying industry sectors with a growing demand and export market (Mathews et al., 2011). Competition in the target market increases the likelihood of choosing exporting as an entry mode since a quick market entry could result in a larger market share compared to domestic competitors also entering the market (Osland et al., 2001).

Socio-cultural conditions are difficult to grasp, although Hofstede (2001) developed measurements for cultural variables within a country. Culture can be defined as the bundle of values, assumptions and normative behaviors of a group (Ojala, 2015). The cultural values of a society affect international entry modes (Kogut & Singh, 1988). Culture holds an implicit role in explaining cross-country differences (Zhang & Dodgson, 2007), as well as being an important factor of internationalization for both Chinese and Japanese firms. Deriving from the

UIP framework, the most important aspect for market entry strategy is connected to psychic distance or cultural distance (Johanson & Vahlne, 1977; Kogut & Singh, 1988). Cultural differences are a commonly cited issue for international market entry (Reardon, Erramilli, & Dsouza, 1996). Chinese firms are more likely to invest in culturally close countries (Zhang & Xu, 2017). Further, cultural distance is connected to the concept of business networks, as networks can be used to bridge cultural gaps in culturally distant countries (Ojala, 2015).

Political and economic conditions are shaped by a variety of factors and have been researched heavily in connection to internationalization and market entry strategy. Host-government intervention was a factor. It affected MNEs in developing countries like Japan and China, as it affects institutional stability and competition in the target market (Henisz & Delios, 2001; Luo, 2002; Narula & Verbeke, 2015) and creates market imperfections (Dunning, 1988). Strong government intervention may deter firms from committing strongly to a foreign market. Political openness, or the lack thereof, similarly deters firms from using specific entry modes (Duanmu, 2012; Root, 1994; Xie et al., 2017) and is an indicator for the ease of entering a market (Stoian & Filippaios, 2008). Equally, political risk is an important influence on internationalization decision (Duanmu, 2012; Henisz & Delios, 2001; Quer, Claver, & Rienda, 2012). Political risk affected Japanese firms more strongly than Chinese firms (Duanmu, 2012; Quer et al., 2012). The legal regime and government policies facilitate or impede international market entry strategy (Duanmu, 2012; Xie et al., 2017). Government policies shape the institutional environment of firms. Policy changes influence the ability of firms to build capabilities, which in turn influence market entry modes (Yang, Jiang et al., 2009). Changes in membership of international trade organizations, for instance, can have a liberalizing effect, which positively affects foreign investment (Deng, 2009; Kotabe & Kothari, 2016). Corporate tax levels also have been found to influence market entry strategy decisions. Both Chinese and Japanese firms are attracted to markets with favorable tax rates (Duanmu, 2012; Kotabe & Kothari, 2016; Pak & Park, 2005). A stable and favorable political and legal regime, including functioning property right protection laws, offers a safer and less costly environment for foreign investment (Boisot & Meyer, 2008; Xie et al., 2017). In terms of the economic factors, an open economy that is strongly involved in international trade has a positive influence on direct investments flowing into its markets (Stoian & Filippaios, 2008). Economic stability is an important indicator for the long-term growth of an economy, which reduces uncertainty and risk for investors (Luo, 2002; Makino et al., 2004; Pak & Park, 2005; Xie et al., 2017). The economic relationship between the home and the target economy was found to support market entry, as the intensity of trade relations between China and other countries encouraged FDI

flows (Quer et al., 2012). Availability of knowledge resources, infrastructure, cost and skill of labor and natural resources all can have effects on market entry choice. For market entry into developed countries, the availability of technology and knowledge has been one of the most important country-level factors for latecomer firms (Athreye & Kapur, 2009; Lebedev, Peng, Xie, & Stevens, 2015; Luo, 2002; Sim & Pandian, 2003; Yuan et al., 2016). Country-level economic factors motivating market entry for Japanese MNEs were the availability of skilled labor, advanced infrastructure and advanced technology (Rugman & Li, 2007). Chinese firms especially sought technology know-how, natural resources and access to markets (Boateng et al., 2008; Child & Rodrigues, 2005; Xie et al., 2017).

2.5.4 Industry Structure and Characteristics

The industry environment directly influences the competitive position and market entry strategies of the firms within the industry (Glowik, 2016; Wu & Zhao, 2007). Porter's diamond considers industry structure, industrial policies and industrial competition as categories for analyzing industry characteristics (Peters, Siller, & Matzler, 2011; Porter, 1990).

Industry size, growth, stability, and productivity, and clusters are important to industry structure, because they allow the industry to grow domestically and shape the ideal conditions for firms to move abroad (Deng, 2012; Li et al., 2005; Porter, 1990; Yang, Lim et al., 2009). National industries may vary in size, depending on the number of firms partaking. The number of firms within the industry is crucial to determine the degree of industrial competition (Karabag & Berggren, 2014). The growth of the home industry is closely connected to competition. When growth rates slow down, product differentiation declines and firms will try to integrate vertically. This vertical integration will most likely drive out smaller competitors and make the market more concentrated (Porter, 1979). Latecomer firms tend to mimic each other's structures and practices, as well as building clusters (Delios et al., 2008; Guillén, 2002; Lu, 2002). Mimetic effects are especially relevant to East Asian MNEs in concentrated industries, which model strategies on successful firms in their business network (Guillén, 2002; Oh & Rugman, 2007). Japanese firms, for instance, display a tendency to follow market entry patterns defined by a reference group of peers of the same industry (Henisz & Delios, 2001; Lu, 2002). Government industrial policy can foster industry competitiveness of firms by targeting, promoting imports, protecting and subsidizing specific industries. Governments flexibly creating an environment for establishing competitive advantage influence the way firms enter foreign markets (Porter, 1990). Connected to size and growth, industrial competition influences

market entry strategies of firms. The stronger the domestic competition, the more likely firms are to move into new markets (Yang, Lim et al., 2009).

Industries can be oligopolistic, atomic or monopolistic. The number of competitors reaches from many non-dominant competitors to a few dominant ones, to a single firm dominating the market (Root, 1994). Based on Hymer (1976)'s concept of rivalry, firms from strongly concentrated industries experience oligopolistic reactions, which drive them towards imitation of rival internationalization decisions (Gimeno, Hoskisson, Beal, & Wan, 2005; Knickerbocker, 1973; Nielsen, Asmussen, & Weatherall, 2017). Oligopolistic industries display a high rate of internationalization (Johanson & Vahlne, 1977). The international strategies and entry conditions of firms in the high-technology industries, are often shaped by its oligopolistic nature (Fu & Zhang, 2011; Gimeno et al., 2005; Glowik, 2016; Sarkar, Cavusgil, & Aulakh, 1999) and the European high-technology market can be considered oligopolistic (Li, 1994; Narula & Santangelo, 2009). Chinese electronic brands have displayed a tendency to build strong home-market positions in highly competitive markets before moving abroad (Fitzgerald & Rui, 2016).

2.5.5 Firm-Level Factors

Based on product life-cycle theory, firms are treated as the crucial level of analysis for market entry strategies. Latecomer theories especially focus on specific firm strategies used for rapid internationalization, as well as on firm factors connected to rapid market entry. Theories of the multinational enterprise also turn the firm into the focus point of analysis (Narula & Verbeke, 2015). Internationalization theory by Rugman, for instance, focuses on firm-specific advantages, which in the resource-based view also referred to as firm capabilities. Firm factors like firm size, product features, firm strategy, and international experience are represented in other strands of internationalization literature as well.

Firm size is a widely confirmed influence on market entry strategies, as large firms possess more firm capabilities and resources for surviving in foreign markets (Guillén, 2002; Knickerbocker, 1973; Li, 1994; Ozawa, 1979).

Product features are a central factor of the product-life-cycle model, as market entry strategies change with the unpredictable changes of products (Vernon, 1966). Product features vary in their degree of differentiation, adaptation ability and requirement of pre and post-purchase service and technology intensity (Chiang & Chathoth, 2013; Root, 1994). Upon market entry, strategies are affected by the level of differentiation of the product, as highly differentiated products can be sold at higher prices than weakly differentiated products. Differentiation is achieved when a product seems outstanding in comparison to competitors to the target market

(Hemmert & Jackson, 2016). Differentiated products frequently are connected to entry modes of higher control, as the firm does not want to lose its differentiating knowledge to potential competitors. Similarly, technology intensity, the requirement of post-purchase service and adaptation ability permit differing entry mode choices to the firm. Technology-intensive products can be manufactured through licensing, but the requirement of service might demand the establishment of wholly-owned subsidiaries. Adaptation ability will demand establishing local management facilities (Root, 1994).

A firm strategy is a bundle of individual plans for specific products in a foreign market (Root, 1994). In consideration of product features, firms follow strategies of product diversification, product adaptation or hybrid strategies. Strategies of product diversification invest resources to adapt the consumers to the product, while strategies of adaptation adapt the product to the consumer market (Driscoll & Paliwoda, 1997; Root, 1994). Japanese electronics firms demonstrate a tendency to enter a market with one of their core products at first and diversifying outside of their core business at a later point (Chang, 1995). Further, aggressiveness of the strategy is repeatedly mentioned in literature on Chinese MNE internationalization. Chinese firms here enter markets rapidly to follow their leading competitors, regardless of product their features (Fitzgerald & Rui, 2016; Ying et al., 2016; Yuan et al., 2016).

Discussed in location models and in the OLI model, locational conditions provide fertile ground for the development of firm capabilities and connected market entry strategies (Henisz & Delios, 2001; Yang, Lim et al., 2009). Dunning (1988) introduces ownership advantages, which fit well into the concept of firm capabilities. Capabilities are the firm's distinctive and specific resources, which generate economic returns and foster competitive advantage (Luo, 2001). Wu and Zhao (2007)'s firm-specific advantages, commonly referred to as capabilities, are a crucial part of firm market entry choice. Tangible and intangible capabilities are necessary to pursue the goal of defining firm strategies (Chandler, 1962; Li, 1994). The more capabilities a firm possesses, the more options it has for choosing an entry mode. For instance, a firm is able to commit more resources as its capabilities increase (Root, 1994). Previous studies established that Japanese and Chinese MNEs can vary significantly in their firm capabilities, for example in their integration into networks, sourcing and price value capability, competitive price and quality structures of production, innovation and R&D capability, dynamic capability, technological capability, management capability, marketing capability, financial strength and learning capability (Deng, 2012; Fitzgerald & Rowley, 2016b; Fitzgerald & Rui, 2016; Ying et al., 2016). In network theory, the integration into global networks via a horizontal or vertical association with a business group or production network is a crucial firm capability (Chang,

1995; Fitzgerald & Rui, 2016). The firm either needs to build its own supplier and distributor network in the target market or build these through strategic alliances with local firms (Luo, 2001). Firms gain an advantage by entering networks because they overcome the perceived liability of foreignness (Vahlne & Johanson, 2013). This is especially important to latecomer MNEs, who use their networks to obtain knowledge about markets and institutional factors and escape underdeveloped market institutions (Chen, 2003; Glowik, 2016; Wright, Filatotchev, Hoskisson, & Peng, 2005). Firms of the Chinese electronics industry are known to build distributor networks and strategic collaboration with universities, product design units and R&D centers abroad (Glowik, 2016; Rubini, Barbieri, Huang, Di Tommaso, & Lan, 2013). Firms with the capability to achieve efficiency and cost-effectiveness through the vertical and horizontal integration of institutional arrangements, such as the integration of their supply chain, possess sourcing and price value capabilities (Dunning, 2015; Fitzgerald & Rui, 2016; Narula & Verbeke, 2015). The Japanese electronics sector has been found to be strong in quality and price structure, putting out high-quality products at relatively low cost (Fitzgerald & Rui, 2016). Competitive price and quality structures of production are frequently mentioned in studies of East Asian latecomer internationalization. Firms gain a competitive advantage over their established competitors because they offer similar products at a drastically lower price. In the case of Chinese firms, this is often connected to intense competition in the home market, which leads successful MNEs to develop competitive price and quality structures (Kotabe & Kothari, 2016). To become non-reliant on price advantages in the global market, firms need strong innovation and R&D capabilities. This means that they are able to develop innovative technology more rapidly than other firms and reap the benefits of cost reductions, monopoly rents and new markets (Guan & Ma, 2003; Kotabe & Kothari, 2016). Dynamic capability is an important resource for firms, which lack other capabilities. It allows the firm to creatively and flexibly organize its own resources to gain a competitive advantage in dynamic environments and develop new resources. In the case of Chinese MNEs, their dynamic capability has shown a positive effect on early market entry strategies (Luo, 2001; Ying et al., 2016). To develop dynamic capability, firms need to have distinctive resources, allocate these resources and build new capabilities. Distinctive resources can be built up through research but must be deployed efficiently. This is facilitated by the existence of local management and decentralized decision making (Luo, 2001). Technological capability can be described by the ability to acquire technology information, identify technology opportunities, respond to challenges, master existing technology and develop innovation. Technological capability can be developed internally or acquired through alliances or acquisitions of firms with technological capabilities.

Better technological capabilities provide higher returns and foster innovation through continuous R&D investment (Wernerfelt, 1984). Management capabilities are a key factor in entrepreneurial theories and describe the ability of the management to “identify and coordinate a range of core skills and assets through a variety of organizational routes, and to promote operational flexibility in a volatile world environment; global marketing networks; the creation and use made of computer-related information and communications technology; and a variety of cross-cultural management-related issues” (Dunning, 1988, p. 25). Management capabilities are crucial to strategies, as strategies inherently serve to deploy resources. Management capabilities are positively connected to dynamic capability, networks, and international experience since managers with international experience perceive opportunities outside of domestic markets (Andersson, 2000; Jones & Coviello, 2005; Knight & Liesch, 2016; Li & Gammelgaard, 2014). Management capability allows the firm to better coordinate information flows, organizational structure and coordination systems (Luo, 2001). Marketing capability can be defined as the “capacity to publicize and sell the products on the basis of understanding consumers’ current and future needs, customers’ access approaches, and competitors’ knowledge” (Guan & Ma, 2003, p. 740). Chinese firms often lack international marketing capability, which manifests in a lack of marketing facilities and weak brand reputation (Child & Rodrigues, 2005; Fitzgerald & Rui, 2016). Japanese MNEs possess sophisticated marketing skills, which enable them to establish their own brand names (Fitzgerald & Rui, 2016; Yang, Jiang et al., 2009). Firms with greater financial strength have the resources to engage in entry modes of higher control levels, like acquisitions or wholly owned subsidiaries, while limited financial resources also limit entry mode choice (Deng, 2012). Learning capability is a central concept of organizational learning theory. The concept is inherently intertwined with institutional process models, as it assumes that individuals in the firm are irrational and make imperfect decisions, which must be corrected in a process of learning (Glowik, 2016). Learning here is understood as “a process of accumulating knowledge either through access to information or business experience” (Glowik, 2016, p. 66). Organizational learning is a “dynamic process where firms seek experiential knowledge about individual clients and markets, as well as about institutional factors, such as how to deal with local laws, governments, and cultures” (Glowik, 2016, p. 66). Learning capability becomes a crucial factor of successful internationalization (Welch & Luostarinen, 1988). Strategies will change over time as an expression of an organizational learning process within the firm. East Asian market entry strategies have a stronger emphasis on organizational learning than western strategies (Belderbos, 2003; Jung, Beamish, & Goerzen, 2008; Makino et al., 2004). The

concept of learning is expressed in firm values and activities. Learning capability can also be connected to membership in business networks, as firms catch up to more developed firms using network knowledge (Belderbos, 2003; Kotabe & Kothari, 2016; Martin & Salomon, 2003; Wright et al., 2005).

Operation experience appears in the UIP, which argues that strategies emerge as the result of prior experience in the target market (Li & Gammelgaard, 2014; Glowik, 2016). International operation experience also appears in Osland et al., Yu and Drauz (2013) and Stopford and Wells (1973). It connects to the concept of market knowledge of the UIP, where commitment decisions are directly influenced by the resource of experience on competition structures, cultural aspects and supplier-costumer structures in the target market (Johanson & Vahlne, 1977). Firms with little operating experience may be deterred from investing in high control modes in unknown environments (Li, 1994).

2.5.6 Entry Mode Choice

Throughout internationalization literature, there is a recurring set of market entry modes. A “market entry mode is an institutional arrangement that enables the entry of a company’s products, technology, human skills, management, or other resources into a foreign country.” (Root, 1994, p. 5). The first entry modes discussed were exporting and FDI (Hymer, 1970; Vernon, 1966; Wolf, 1977). Johanson and Vahlne (1977) identify independent export, export through sales subsidiaries and FDI. Foreign direct investments were further differentiated into acquisitions and greenfield investments. Joint ventures additionally become part of internationalization studies (Kogut & Singh, 1988). Entry modes are categorized by their degree of cooperation as either contractual, cooperative or hierarchical (Dunning, 1988; Glowik, 2016; Luo, 1998; Meyer & Thaijongrak, 2013; Osland et al., 2001).

Contractual entry modes include exporting, contract manufacturing, original equipment manufacturing (OEM), contract licensing, franchising and management contracts (Andersen, 1993; Dunning, 1988; Glowik, 2016; Hemmert & Jackson, 2016; Lu & Beamish, 2004, 2004; Mathews, 2006; Mathews et al., 2011; Osland et al., 2001; Sim & Pandian, 2003). Contractual agreements are typically low in resource commitment and offer limited hierarchical control (Glowik, 2016). Exporting is a business activity “where goods and/or services are sold outside the country in which the major value-added activities took place” (Glowik, 2016, p. 156; Upitz, 2013, p. 39). It is a quick and risk-reduced strategy. Exporters have limited hierarchical control, as they do not have the necessary ownership to control the marketing of their products abroad (Glowik, 2016). Exporting commonly requires little resource investment (Lu & Beamish, 2001)

and carries low technology risk (Osland et al., 2001). Contract manufacturing or original equipment manufacturing (OEM) describes the process of establishing foreign market production capacities by contracting a local manufacturer with manufacturing a product. The original brand manufacturer (OBM) contracts a firm in the target market, which could produce with the desired quality standards and cost structures. The original equipment contractor focuses on production, while the OBM takes care of other areas like marketing and design. OEM is a fast-moving strategy, popular in high-technology industries. The requirement of resource commitment is low, and flexibility is high. Hierarchical control over administrative and manufacturing processes is virtually non-existent. The technology risk of transferring core knowledge from OBM to OEM is high, as the contractor may adapt original manufacturing and business expertise to become a future competitor (Glowik, 2016). Contract licensing occurs when firms transfer intangible assets like knowledge, patents, trademarks, etc. to foreign licensee firms. The licensor usually holds a trademark or patent, which protects the intellectual property from the illegal use of this knowledge. Contract licensing grants the licensee the right to use intellectual property in a defined market for a certain amount of time, as defined by a contract. The owner of the knowledge exchanges his knowledge-based resources for the payment of royalties or other forms of payments, often based on sold product units. Franchising is a special sub-form of licensing, defined as a contractual agreement between a franchise giver and two or more legally and financially separated franchisees (Upitz, 2013). The franchisor grants small business owners the right to commercialize their product under an established business concept and brand name. The franchisee is supported with administrative and technical assistance by the franchise giver, and in return pays royalties, startup-fees and advertising fees. Licensing and franchising are rapid entry strategy modes, with reduced resource commitment and hierarchical control over operation on the side of the franchise giver. The entrepreneurial risks of entering the new market are reduced for the licensor. Transferring intangible assets to the licensee increases the risk of creating a competitor, who reproduces formerly licensed technology (Glowik, 2016; Osland et al., 2001). In a management contract, firms deploy their staff to firms in a foreign market during a specific period of time and for a fixed fee. The transferring firm may hereby enter a foreign market and strengthen their competitive ability in the market. On the other side of the contract, the recipient firm can develop its staff technically and commercially. The level of resource commitment is relatively low, although qualified personnel is lost for a certain amount of time. The amount of control is only guaranteed during the deployment of the consultants to the foreign firm. The level of technology risk is determined by the risk of transferring extensive knowledge to a potential future competitor (Glowik, 2016).

Cooperative entry modes include international joint ventures (JVs) and international strategic alliances (Andersen, 1993). According to Johanson and Vahlne (2009), firms are forced into cooperative strategies because they no longer have the resources to deal with deregulation and technological changes on their own. Cooperative forms offer intermediate levels of control, and resource commitment, where ownership, or equity shares, are equally distributed between partners (Vernon, 1966, p. 199). Evidence from the Chinese automobile industry suggests that JVs and strategic alliances with foreign firms were established with the aim of absorbing manufacturing competence and technology (Yu & Drauz, 2013). Technology-intensive firms are at risk of losing intangible resources when engaging in cooperative strategies, especially in countries with poor property right protection (Malhotra & Hinings, 2010). Cooperative market entry strategies are typically intermediate to long-term in their market entry timing and vary in their level of ownership (Glowik, 2016). “A joint venture is the pooling of assets into a common but separate organization by two or more firms which share joint ownership and control” (Li, 1995, p. 337). JVs are legally independent entities. There is a distinction between equal joint ventures and majority joint ventures, whereas the former describes a set up where every party provides half of the equity and carries the same amount of technology risk, control and revenue. In the latter, one party provides more than half of the equity and strategically controls the joint venture. A JV becomes an international JV, when one of the joint venture parents has its headquarters in a different country than the country of the JV operation or when operations take place in more than one country (Glowik, 2016; Upitz, 2013). JVs are moderate to intermediate in control, depending on the level of ownership of the partners (Anand & Delios, 1996; Osland et al., 2001). The technology risk of the JV lies in opportunistic behavior by one of the partners and unequal sharing of proprietary knowledge, where the level of control may be too low to effectively keep the partner in check (Glowik, 2016; Jung et al., 2008; Osland et al., 2001). Strategic alliances typically are long-term agreements between two or more organizations, targeting business operations, where no third legally independent party is involved. These alliances become international, when they are formed “between firms across national boundaries in the same or different industries” (Glowik, 2016, p. 169) and therefore where at least one partner is located abroad. International strategic alliances can be conducted with or without capital participation (Glowik, 2016). Alliance partners usually share strategically important resources, like customer information or distribution channels. Firms involved in strategic alliances remain legally independent entities, legally responsible for their business activities, which is the main difference between strategic alliances and joint ventures. While strategic alliances are formed as non-equity cooperation with no mutual investments, there are

cases of equity participation of one firm to the other or between the participating firms. This equity participation takes the form of FDI when one partner invests in their partner located in the foreign market (Upitz, 2013). International strategic alliances require the mutual commitment of resources, although commitments depend on the level of participation of the individual firms (García-Canal et al., 2002). The same holds true for the level of control in the strategic alliance. The level of technology risk is determined by the act of exposing valuable resources and knowledge to a partner firm, who is or may become a competitor (Glowik, 2016).

Hierarchical market entry strategies usually appear in the shape of FDI and take on the form of wholly-owned subsidiaries (WOS) or M&As (Andersen, 1993; Glowik, 2016; Hennart, 2009; Jones & Coviello, 2005; Lu & Beamish, 2004; Upitz, 2013). Hierarchical market entry strategies are high in their level of control over foreign operations and require a great level of resource commitment (Anand & Delios, 1996; Lu & Beamish, 2001, p. 568). The risk of undesired technology transactions is low, as markets are internalized by the firm (Hennart, 1982; Rugman, 1982). To profit from high levels of control and low levels of technology risk, firms have to trade-off high levels of resource commitment (Cartwright & Schoenberg, 2006). M&As combine the resources of two existing firms to establish a new company. When two or more firms of similar size from different countries merge, this is called an international merger. In cross-border acquisition, the firm buys at least one part of equity from a foreign firm to gain access to firm resources (Barkema & Vermeulen, 1998). M&As can be performed either horizontally or vertically. Horizontal acquisitions take place when a foreign firm of the same position in the industry chain is purchased. A vertical acquisition is the purchase of foreign suppliers or distributors (Glowik, 2016). Cross-border M&As are a rapid market entry strategy, which offers the investor a high amount of control over acquired capabilities, know-how and market information (Johanson & Vahlne, 2009; Liu & Buck, 2009). A wholly owned subsidiary (WOS) is a business, which “owns all of the capital invested abroad, such as research and development, sales, and/or manufacturing facilities” (Glowik, 2016, p. 192). The WOS can either be a whole new operation, a greenfield investment, start-up, equity participation, or a complete take-over of a foreign firm (Glowik, 2016). Greenfield investments or foreign start-ups are an alternative to acquisitions. They are defined as investments where a firm develops and build new facilities target country based on existing capabilities and technology, essentially starting a whole new organization (Belderbos, 2003; Upitz, 2013). FDI in the form of WOS grants full hierarchical control over decision-making processes, quality, and knowledge management and therefore also grants a high level of hierarchical control to investors (Anand & Delios, 1996; Glowik, 2016). While the technological risk is low, since operations are solely

controlled by one firm, an investor has to commit a large number of resources to a WOS (Osland et al., 2001).

2.5.7 Entry Mode Characteristics

Hymer (1976) is a central theorist for grasping the importance of entry mode characteristics for internationalization strategies. The extent of international firm operations, according to Hymer, is shaped by a desire for ownership and control. There are several means to achieve ownership and control. Osland et al. (2001) characterize market entry strategies according to hierarchical control, resource commitment, and technology risk. All three dimensions are highly correlated with each other, since increased control results in lower technology risk and correlates with higher resource commitment (Woodcock, Beamish, & Makino, 1994). Hierarchical control is defined as “the ability and willingness of a firm to influence decisions, systems, and methods in foreign markets” (Osland et al., 2001, p. 155). Root (1994) argues that firms will gradually change entry mode to have more control over foreign operations. A high degree of corporate structure centralization and a close relationship with existing subsidiaries are expressions of highly hierarchically controlled strategies. In developed countries, for example, Japanese investment is characterized by its strong levels of control over subsidiaries (Fitzgerald & Rui, 2016; Makino et al., 2004). Contractual entry modes are typically low in hierarchical control, cooperative modes intermediate and hierarchical modes strong in control (Vernon, 1966). Technology risk as a concept describes the risk of an undesired loss of technology and is defined as “the potential that a firm's applied knowledge (tangible and/or intangible) will be unintentionally transferred to a local firm” (Osland et al., 2001, p. 155). Specific entry modes are high in technology risk, as they grant parties outside of the firm access to valuable technological resources, especially outward licensing and original brand manufacturing (Osland et al., 2001). Control and technology risk are connected since high control modes are chosen to lessen the threat of opportunistic behavior of transaction partners under conditions of high asset specificity (Lu, 2002). With stronger firm-specific technological capability, modes of high control and low risk become more probable. There is significant evidence, that the relationship between technology risk and various entry modes influences the selection of entry mode (Woodcock et al., 1994). Resource commitments are defined by Osland et al. (2001) as “dedicated assets that cannot be employed for other uses without incurring costs”. These resources can be of tangible nature, like money or machines, or of intangible nature, like skills. In the UIP, firms choose the degree of commitment to a new market based on its liability of foreignness and based on their previous experience (Johanson & Vahlne, 1977). A firm with abundant capabilities has a wider range of market entry options, due to greater a range of

resources (Root, 1994). Contractual entry modes generally demand little commitment, cooperative modes intermediate commitment and hierarchical modes high resource commitments (Glowik, 2016).

Wu and Zhao (2007) add the entry mode characteristics of flexibility, and ownership to the list of entry mode characteristics. The flexibility of a market entry mode is determined by its entry speed and the sustainability of the planned entry mode, as in its ability to change the mode quickly with low cost. The initial set-up time of a WOS, for example, is shorter than that of a joint venture (Osland et al., 2001; Wu & Zhao, 2007). Large resource commitments and long-term contracts make it more difficult to change entry modes, which makes entry modes like WOS less flexible (Osland et al., 2001). Exporting and WOS are flexible and quicker ways to enter markets since they do not require as much mutual coordination and trust building as relationship-based entry modes like JVs (Osland et al., 2001). On the other hand, Cui and Jiang (2009) argue that JVs might provide a quicker and more flexible entry in some cases than WOS since operational capability is already available locally and less resource commitment is required. They add that country risk can determine the level of desired flexibility for Chinese MNEs. Ownership describes firm equity participation in an entry mode (Wu & Zhao, 2007). Japanese firms tend to have higher equity ownership levels in their market entry strategies for developed countries (Makino et al., 2004; Pak & Park, 2005). Chinese MNEs displayed a tendency to either fully own or to control their subsidiaries via shares (Glowik, 2016). Ownership might be limited by government restrictions in the target market, which limits firms to minority ownership or cooperative entry modes (Anand & Delios, 1996). Cultural distance might also have a negative effect on full-ownership modes, which can be lessened by market potential, strategic assets or natural resources (Xie et al., 2017).

2.6 Research Gap

The state of the art provided a review of the rich theoretical background of internationalization theories available to analyze Japanese and Chinese market entry strategies. Scientific literature is however fragmented and often concentrates on a single level of analysis, neglecting influential factors from the other common levels of analysis. For instance, country, industry, and firm-level studies dealt with the factors of Japanese and Chinese internationalization processes. Frameworks tying together all levels of analysis are rare so far and remain underdeveloped for the high-technology sector. Furthermore, there seems to be little concrete investigation on the process of entry strategy development of Japanese and Chinese firms. Process studies so far have neglected the entry strategies of East Asian in the European market.

They instead focused on research in the field of catch-up internationalization and latecomer market entry into developed countries in general. A more recent focus in literature concentrates on East Asian firm entry into the European market (Brouthers, O'Donnell, & Hadjimarcou, 2005; Glowik, 2016; Rubini et al., 2013). It seems more than necessary to reduce the research gap on East Asian firm internationalization in Europe through an in-depth case study of Japanese and Chinese high-technology MNEs' market entry strategies in Europe. This holds especially true, now that Chinese high-technology companies are becoming increasingly more present in the European mainstream media. Researchers are also looking to make sense of a growing Chinese market involvement overseas (Yang, Jiang et al., 2009). Hemmert and Jackson (2016) state that models based on the western internationalization processes are insufficient to predict the processes of leading East Asian MNEs. This thesis aims to become a piece in the puzzle of studies on the internationalization process of East Asian MNEs, which can fill the gaps of existing theories. It contributes an eclectic approach to studying market entry strategies, incorporating factors from industry-based, resource-based and institutional views into one theoretical framework for studying these factors' influence on firm strategy over time. With this framework, differences and similarities of Japanese and Chinese MNEs market entry strategies can be compared on both the macro and micro levels, revealing patterns of similarity and disparity.

3 Framework of Analysis

3.1 Country-Level Factors

3.1.1 Demand and Competition

The **size of the market or market demand** can be measured by gross domestic product (GDP) per capita in current US Dollars (USD) and household and Non Profit Institutions Serving Households (NPISHs) final consumption expenditure in current USD, which stands for household expenditure (Duanmu, 2012; Luo, 2002; Makino et al., 2004; Osland et al., 2001; Yang, Lim et al., 2009). The dynamic of the target market, expressed as market growth, is measured by GDP growth (Ramasamy & Yeung, 2016). Concentration in the home (covered in the industry factors) and target market can be measured by the number of competitors holding significant market share in the target market (Guan & Ma, 2003; Lee, 2009). GDP and household consumption data are collected from the World Bank and market share concentration in the EU market is extracted from secondary literature sources.

3.1.2 Socio-Cultural Conditions

Cultural distance can be measured with the index created by Kogut and Singh (1988). It is calculated from the scores of Hofstede's cultural dimension of individualism, masculism vs. feminism and power distance, and uncertainty avoidance. All scores can be derived from Hofstede Insights (2018).

3.1.3 Political and Economic Conditions

Host-government intervention is measured by government spending (general government final consumption expenditure in % of GDP) and corporate taxation (top statutory corporate income tax rate in %) (Duanmu, 2012). The data are collected from the World Bank and OECD tax database for the period between 1980 – 1994 (EU15) and from Eurostat for 1995 – 2017 (EU 27/28). Pre-1980 data are available only for Germany, France and Italy, distorting the index to the point that analysis can only be done post-1980. **Political openness** can be measured by the existence or absence of political restrictions on foreign ownership, on importing or on hierarchical entries (Duanmu, 2012; Xie et al., 2017). They can further be measured through qualitatively identifying restrictive tariffs, taxes and labeling policies from secondary literature (Root, 1994). Operationalization is also done through the tariff rate (applied, simple mean, all products in %) by the World Bank and the FDI Regulatory Restrictiveness Index by the OECD. This index measures investment restrictions across 22 economic sectors and rates restrictiveness based on foreign equity limitations, discriminatory screening or approval mechanisms, employment restrictions against foreigners and operational restrictions (e.g. land ownership restrictions). Openness of the economy can also be operationalized by exports plus imports over GDP (Luo, 2002; Stoian & Filippaios, 2008), which is calculated based on the World Bank indicators exports of goods and services (current USD) plus imports of goods and services (current USD) over GDP (current USD). **Political risk** is measured through the International Country Risk Guide's political risk index (Duanmu, 2012; Osland et al., 2001; Quer et al., 2012). The political risk index is hidden behind a paywall, but averages of sub-indicators are publicly available for the period between 1996-2016 (1997, 1999, 2001 missing). Sub-indicators include voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law and control of corruption. Of this data, an EU 28 Index is created ranging from 1 to 0 (1 representing low political risk). The index excludes Liechtenstein entirely and Croatia, Estonia, Latvia, Lithuania and Slovenia in 1996. **Economic stability** can be operationalized by the World Bank indicator of annual inflation of consumer prices in % (Duanmu, 2012; Luo, 2002; Xie et al., 2017). **Host-legal regime and**

policies and their favourability for firm internationalization can be analyzed qualitatively according to the available intellectual property rights protection and government policies (Deng, 2009; Fitzgerald & Rui, 2016; Kotabe & Kothari, 2016; Pak & Park, 2005; Wan, 2005).

Target country production factors are the factors knowledge and technology resources, infrastructure, cost and quality of labor and natural resources influence entry modes (Root, 1994). Knowledge and technology resources are measured according to the World Bank indicators of number of the patent applications by residents, high-technology exports as % of manufactured exports, researchers in R&D per million people and R&D expenditure in % of the GDP (EuroStat, 2018b; Henisz & Delios, 2001; Pak & Park, 2005). The availability of infrastructure is measured with the World Bank indicators of rail lines in total route-km and electric power consumption in kilowatt hour per capita. The size of natural resources is measured as the total natural resources rents in % of GDP by the World Bank (Luo, 2002; Rugman & Oh, 2008; Yang, Lim et al., 2009). The availability and cost of skilled labor is measured by the World Bank indicator of tertiary school enrollment in gross % for skill. For cost of labor, unit labor costs as provided by the European Commission, UNCTAD and other literature sources is used (Luo, 2002; Rugman & Oh, 2008; Yang, Lim et al., 2009).

3.2 Industry-Level Factors

3.2.1 Industry Structure

Industry structure is determined by its size, growth, stability, productivity and its supportive industry and industry clusters (Deng, 2012; Li et al., 2005; Porter, 1990; Yang, Lim et al., 2009). Industry size can be measured as the number of production personnel in the industry (Rushing, 1967) and industry growth as annual sales growth in % (Luo, 1999). Industry productivity can be measured by output produced per unit of labor (Porter, 1990) and industry stability as sales stability in the home market (low level of annual sales growth variance) (Ayal & Zif, 1979). Data sources are the U.S. Bureau of Labor Statistics, the OECD and the METI. The existence of supportive industry clusters is qualitatively measured by the existence of buyer-seller relationships, common-costumer, common technology, and common channel relationships in geographical proximity (Porter, 1990; UNCTAD, 2016).

3.2.2 Industrial Policies

Industrial policies are determined by the government support of the specific industry and operationalized by the existence of policies to promote industrial development in cooperation with large firms and universities, loans, financial subsidies, licences, tax concessions,

government contracts, import permits and protection, foreign exchange and technology, capital, labor and resource assistance for the electronics industry (Fitzgerald & Rui, 2016; Fu & Zhang, 2011; Luo, 2002). Data on industry policies are extracted qualitatively from secondary literature, firm reports and government websites of the analyzed countries.

3.2.3 Industrial Competition

Industrial competition is characterized by industry concentration. It is measured through the distribution of market shares to firms across the industry and the number of firms controlling more than 50% of the domestic market shares (Glowik, 2016; Lee, 2009; Pak & Park, 2005). Data are extracted from firm reports, secondary literature, and industry reports.

3.3 Firm-Level Factors

3.3.1 Firm Size

The most common measure for **firm size** is the number of employees (Martin, Swaminathan, & Mitchell, 1998; Reardon et al., 1996; Ying et al., 2016) and firm revenue, which is listed as total sales in some balance sheets (Luo, 1999; Stoian & Filippaios, 2008). Data are collected from firm reports and secondary literature.

3.3.2 Product Features

Product features vary in their degree of differentiation, adaptation ability, and technology intensity (Root, 1994). To grasp the extent of the product portfolio, the percentage of each product segment of firm revenue can be utilized (Delios & Beamish, 1999). The degree of product differentiation is measured by brand value and number of published patents of the firm in Europe (Hymer, 1970). Adaption ability is measured by the firms dynamic and technological capabilities, which are covered under capabilities (McKee & Konell, 1993). Technology intensity of products is measured according to their sector in EU high-tech classification of manufacturing industries, called NACE Rev.2 3-digit (EuroStat, 2018a), and according to requirement of pre- and post-purchase service, expressed as number of service centers in the target market. Data are collected from firm reports and the Google patent database.

3.3.3 Strategy

Objectives and goals of the strategy can be qualitatively derived from company data, such as annual reports and company statements. Objectives and goals could e.g. include intended sales volume, market share, return on investment, profits, the establishment of a distribution network, product differentiation, etc. (Root, 1994). **Strategy Aggressiveness** can be determined by a

high speed of market entry and increase in market shares and high commitment market entry modes (Lee, 2009; Lu & Beamish, 2004; Malhotra & Hinings, 2010; Wan, 2005). Analysis of strategy aggressiveness is based on the findings on entry mode choice and characteristics.

3.3.4 Firm-Specific Capabilities

Integration into a business or production network can be measured via the proxy of equity-based alliances with business groups or suppliers within the same industry (Henisz & Delios, 2001; Shi, Sun, Pinkham, & Peng, 2014). **Sourcing and price value capability** is operationalized by the level of vertical integration of the production and supply chain and the ability to produce at a lower price. The integration of supply chain can be measured through events of official association with former suppliers and the ability to produce at a lower cost, expressed as unit production costs. **Competitive price and quality structures** of production is operationalized through lower cost of skilled labor in the home market and measured by GDP per capita of the country (Duanmu, 2012; Guan & Ma, 2003; Rugman & Li, 2007). Innovation and R&D capabilities of the firm can be operationalized through R&D and advertising intensity (Rubini et al. 2013), which is measured by existence and investment into R&D centers (Lu & Beamish, 2004; Rubini et al., 2013; Wan, 2005), ratio of R&D expenditure to sales (R&D intensity) (Aydalot und Keeble 2018), number of patents held by the firm in Europe (Yuan et al. 2016), winning international design awards and the existence of strategic alliances with universities or other research facilities (Guan & Ma, 2003; Luo, 2002; Rubini et al., 2013). **Dynamic capability** is approximated by commercial responsiveness to the foreign market and measured through the existence of local management, decentralized decision-making powers and the existence of local R&D centers (Fitzgerald & Rui, 2016). **Technological capability** can be measured by prior licensing and contracting arrangements with foreign firms (Rugman & Li, 2007) or by acquisitions of technology-intensive firms (Belderbos, 2003; Deng, 2009). Additionally, stable R&D investment (low variance of investment growth into R&D) speaks for the development and maintenance of technological capability (Wernerfelt, 1984). **Management capability** can be measured by the number of managers with international experience in the firm (Deng, 2012; Guan & Ma, 2003; Root, 1994; Yang, Lim et al., 2009; Yuan et al., 2016). **Marketing capabilities** can be measured by the increase in brand value, acquisitions of valuable brands (Child & Rodrigues, 2005), opening and investments in service and marketing facilities abroad (Child & Rodrigues, 2005; Guan & Ma, 2003) and advertising expenditure as percent of total sales (Lu & Beamish, 2001). **Financial strength** can be measured by the number of employees, firm revenue, debt ratio (debt plus equity) and total assets of the firm (Chakravarty, Hsieh, Schotter, & Beamish, 2017; Geringer et al., 2000; Martin

et al., 1998). **Learning Capability** can be operationalized and measured through the mention of learning in strategic intent, R&D guidelines mission statements, etc. and investment in training and education (e.g. seminars for sharing best international practices) and availability of a control system for learning processes (Guan & Ma, 2003; Luo, 2001). Data on firm capability is collected from firm reports and the World Bank.

3.3.5 International Operations Experience

International operations experience can be measured by firm export ration (foreign sales to total sales) (Chang, 1995; Deng, 2012; Osland et al., 2001), number of foreign subsidiaries and age in years of foreign subsidiaries in the target market (Henisz & Delios, 2001, 2001; Yuan et al., 2016). Additionally, Martin et al. (1998) propose the number of managers with international experience within the firm, as managers play a crucial role in bringing in and raising awareness for international experience to the organization. Data are collected from firm reports and websites.

3.3.6 Entry Mode Choice

Like in Driscoll and Paliwoda (1997), **entry mode choice** is operationalized in a qualitative trichotomy of contractual, cooperative and hierarchical entry modes. The categorization reflects the strategy choices discussed in 2.5.7 and displayed in Figure 2. Data on entry mode choice is collected from secondary literature, firm reports, and press releases.

Contractual Entry Modes	Cooperative Entry Modes	Hierarchical Entry Modes
Exporting	International Strategic Alliance	Wholly-Owned Subsidiaries
Contract Manufacturing (OEM)	International Joint Venture	Mergers & Acquisitions
Contract Licensing/Franchising		
Management Contracts		

Figure 2 Contractual, Cooperative and Hierarchical Market Entry Strategies

3.3.7 Entry Mode Characteristics

Hierarchical control is characterized by the relationship between the parent firm and subsidiary, regarding its subsidiary location, number of regional headquarters, parent firm ownership in %, subsidiary age in months, parent control over production system, sales, and marketing (Chakravarty et al., 2017; Fitzgerald & Rui, 2016; Makino, Lau, & Yeh, 2002). Further, the degree of centralization in corporate structure regarding its level of hierarchy in

organization structure, the number of expatriate staff in %, bureaucratic control, and centralized management system, indicates the degree of control associated with a market entry strategy (Fitzgerald & Rui, 2016; Makino et al., 2002). **Technology risk**, referred to as dissemination risk in Wu and Zhao (2007), can be measured as the level of access granted to parties outside of the firm (Osland et al., 2001), with some entry modes inherently granting more access to core technology than others (Luo, 2002; Osland et al., 2001). Wu and Zhao (2007)'s resource characteristics converts to **resource commitment**, operationalized by the number of new WOS and new M&As, as well as investments in facilities and human resources in the target market (Glowik, 2016; Makino et al., 2002; Osland et al., 2001). The **flexibility** of the market entry strategy is characterized by the speed of market entry and the planned investment strategy sustainability. Market entry strategies can be characterized as quick- or long-term (initial set-up time) (Osland et al. 2001; Pak and Park 2005) and short- or long-term sustainable regarding % of stock acquisition and level of hierarchical control (Fitzgerald & Rui, 2016). **Ownership** is characterized by the extent of equity participation in an entry strategy, measured as average ownership in % (Anand & Delios, 1996; Wu & Zhao, 2007). Data originates from firm sources.

Level of Analysis	Factor	Operationalization	Measurement	Data Source
Country-Level	Market Demand and Competition	<i>Market Size/Market Demand</i>	GDP per capita (current USD), Households and NPISHs Final consumption expenditure (current USD), EU Market Concentration (Distribution of Market Shares found in Literature Sources)	World Bank, Baden-Fuller and Stopford (1991), Tagliabue (1998), Commission of the European Communities (1999), Baldassarri (1992)
	Socio-Cultural Conditions	<i>Cultural Distance</i>	Kogut and Singh Index	Hofstede Insights
	Political and Economic Conditions	<i>Host-Government Intervention</i>	General Government Final Consumption Expenditure in % of GDP, Aggregate of Corporate Tax Rate	World Bank, OECD Tax Data Base, Eurostat
		<i>Political Openness (Host Market)</i>	Existence of Trade Protection Measures, Tariff Rate (applied, simple mean, all products in %), FDI Regulatory Restrictiveness Index, Exports of Goods and Services (Current USD) Plus Imports of Goods and Services (Current USD) over GDP (Current USD)	World Bank, OECD
		<i>Political Risk (Host Market)</i>	Literature Source's Assessment, EU Index of International Country Risk Guide's Political Risk Index Sub-Category Scores	Vachudova (2006), Ersson and Lane (1983), PRS Group
		<i>Economic Stability</i>	Inflation of Consumer Prices (Annual %)	World Bank
		<i>Legal Regime and Government Policies (Host-Government)</i>	Measures of Intellectual Property Right Protection, Existence of Restrictive and Liberalizing Policies	Bently and Sherman (2014), Trimble (2011), Hanson (1998), European Commission
		<i>Target Country Production Factors</i>	Knowledge and Technology Resources (Number of Patent Applications by Residents, High-Technology Exports as % of Manufactured Exports, Researchers in R&D per Million People and R&D Expenditure in % of the GDP), Infrastructure (Rail Lines in Total Route-Km, Electric Power Consumption in kWh per Capita), Cost and Quality of Labor (Tertiary School Enrollment in Gross %, Unit Labor Costs), Natural Resources (Total Natural Resources Rents in % of the GDP)	World Bank, UNCTAD, European Commission, OECD, Rui and Yip (2008)

Industry-Level		Percentage of Employees in the Total Workforce in Manufacturing, Gross Value in Household Appliances, Number of Employees in Household Appliances, Value and Number of Produced Appliances	U.S. Bureau of Labor Statistics, OECD, METI,
Industry Structure	Industry Size		Yamada (1990), Daikin Industries, Ching and Shi (2016),
	Industry Growth	Annual Sales Growth Rates in Percent	Ching and Shi (2016)
	Industry Stability	Variance of Annual Sales Growth	Dore, (2013); Hulten (2007), Ahn, Fukao, and Kwon (2004), Jorgenson and Nomura (2007), Jefferson, Rawski, and Zhang (2008)
	Industry Productivity	Literature Source’s Assessment	JETRO, Liu and Yang (2013)
	Supportive Industry and Clusters	Existence of Industry Clusters	Ozawa (1979), Tatsuki, Elliot, and Togawa (2015), Fitzgerald and Rui (2016), WTO, Daikin Industries, IEA, JETRO, Hong and Sun (2006), Yu and Drauz (2013), Child and Rodrigues (2005), Schüller and Turner (2005), Liu and Yang (2013), Seaman, Huotari, and Otero-Iglesias (2017)
Industry Policies	Government Support of the Specific Industry	Existence of Policies to Promote Industrial Development in Cooperation with Large Firms and Universities, Loans, Financial Subsidies, Licences, Tax Concessions, Government Contracts, Import Permits and Protection, Foreign Exchange and Technology, Capital, Labor and Resource Assistance	U.S. International Trade Commission, Daikin Industries, Tatsuki et al. (2015), Midea Group, Cortesi (2011), Shih (2004), Tse (1998), Wang (2014)
Industrial Competition	Industry Concentration	Distribution of Market Shares to Firms Across the Industry in %, Number of Firms Controlling More Than 50% of the Domestic Market Shares	

Firm-Level	Firm Size		Number of Employees, Firm Revenue (Total Sales)	Daikin Industries, Midea Group
Product Features		<i>Product Portfolio</i>	Percentage of Product Segment of Firm Revenue	Daikin Industries, Midea Group
		<i>Product Differentiation</i>	Primary Source Assessment, Brand Value in Current USD, Number of Published Patents in Europe	Daikin Industries, Midea Group, Google Patents, Forbes
		<i>Adaptation Ability</i>	Firms Dynamic and Technological Capabilities (from Capability Section)	Daikin Industries, Midea Group
		<i>Technology Intensity</i>	EU High-Tech Classification of Manufacturing Industries Based on NACE Rev. 2 3-Digit Level, Requirement of Pre- and Post-Purchase Service	Daikin Industries, Midea Group, EuroStat
Strategy		<i>Objectives and Goals</i>	Primary Source Assessment	
		<i>Strategy Aggressiveness</i>	Speed of Market Entry (Entry Mode Choice), Market Share, Level of Commitment (Entry Mode Choice)	Daikin Industries, Midea Group
Firm-Specific Capabilities		<i>Integration into Business or Production Network</i>	Existence of Equity-Based Alliances with Business Groups or Suppliers Within the Same Industry	Daikin Industries, Midea Group
		<i>Sourcing and Price Value Capability</i>	Events of Official Association with Former Suppliers, Unit Production Cost, Supply Chain Integration	Daikin Industries, Midea Group
		<i>Competitive Price and Quality Structures of Production</i>	GDP per Capita Home Market	World Bank
		<i>Innovation and R&D Capabilities</i>	Existence of R&D Centers, R&D Intensity in %, Investment in R&D Facilities, Number of Patents Granted in Europe, Number of International Design Awards, Existence of Strategic Alliances with Universities or Other Research Facilities	
		<i>Dynamic Capabilities</i>	Existence of Local Management, Decentralized Decision-Making Powers and Existence Local R&D Centers	Daikin Industries, Midea Group
		<i>Technological Capabilities</i>	Prior Licensing and Contracting Arrangements with Foreign Firms, Acquisitions of Technology-Intensive Firms	

Firm-Specific Capabilities	<i>Management Capabilities</i>	Number of Managers with International Experience	
	<i>Marketing Capabilities</i>	Brand Value in Current USD, Acquisition of Valuable Brands, Investment in Service and Sales Facilities Abroad, Advertising Expenditure (SG&A Expenses Without R&D Expenses/Selling Expenses)	Daikin Industries, Midea Group
	<i>Financial Strength</i>	Number of Employees, Revenue, Total Assets, Debt Ratio	
	<i>Learning Capabilities</i>	Mention of Learning in Strategic Intent, R&D Guidelines, Investment in Training and Education	
International Operation Experience		Export Ratio, Number of Managers Within the Firm with International Experience, Number of Subsidiaries in Europe (Accumulated), Age in Years of Subsidiaries in Europe	Daikin Industries, Midea Group
Entry Mode Choice	<i>Contractual</i>	Occurrence of Exporting, OEM, Contract Licensing, Management Contracts	Daikin Industries, Midea Group, Tatsuki
	<i>Cooperative</i>	Occurrence of Joint Ventures, Strategic Alliances	et al. (2015), Cortesi (2011)
	<i>Hierarchical</i>	Occurrence of WOS, M&As	
Entry Mode Characteristics	<i>Hierarchical Control</i>	Parent-Subsidiary Relationship (Subsidiary Location, Number of Regional Headquarters, Parent Firm Ownership in %, Subsidiary Age in Months, Parent Control over Production System, Sales, and Marketing), Degree of Centralization in Corporate Structure (Level of Hierarchy in Organization Structure, Centralization of Structure, Expatriate Staff)	
	<i>Technology Risk</i>	Level of Access Granted to Parties Outside of the Firm	Daikin Industries, Midea Group
	<i>Resource Commitment</i>	Number of New Acquisitions, Number of New Subsidiaries, Investments in Facilities and Human Resources	
	<i>Flexibility</i>	Speed of Market Entry (Initial Set-up Time of Entry Mode), Short- or Long-Term Sustainability (% of Equity Participation in M&As, Hierarchical Control)	
	<i>Ownership</i>	Average Equity Ownership in %	

Figure 3 Analytical Framework for Comparing Japanese and Chinese Market Entry Strategies in the European Market

4 Methodological Approach

4.1 Case Selection Criteria

This thesis seeks to establish the observable similarities and differences in the international market entry strategies of Japanese and Chinese high-technology MNEs in the European market. The analysis is based on a qualitative case-study approach, selecting a Japanese and a Chinese case according to their comparability of industry type, product type, company age, ownership structure and experience in the European market. This selection process is demonstrated by Zahra, Ireland, and Hitt (2000) and Rhee (2008). Company age, measured by the number of years the venture is in existence, is expected to be higher for the Japanese selection, since Japanese firms were able to move into western markets in the 1970s (Chang, 1995), whereas Chinese firms only started to enter these markets after market liberalization in 1979 (Fitzgerald & Rui, 2016). The length of international business experience in the European market, measured by years since products first entered the European market until the current day, is therefore expectedly longer for the Japanese case. Company size, measured by the firm's employees, and industry type, defined by involvement in the same product types in the high-technology industry, also are crucial conditions in case selection. Ownership is comparable in the sense that both MNEs should be classified as independently owned private companies or units of a corporation. Entry into the European market in this thesis will be considered given when the company has entered the market of one or more of the current 28 EU member states.

4.2 Daikin and Midea – Leaders in the Home Appliance Industry

The two firms selected for analysis are Daikin Industries, Ltd. and Midea Group.

Daikin Industries is headquartered in Osaka, Japan, and works in the chemical, home appliance, defense, and electronics business. Daikin operates in over 150 countries worldwide, which makes it a good example of a Japanese MNE. For the fiscal year 2016, Daikin reported 18,23 billion USD in revenue and employed about 70.000 people around the world (Daikin Industries Ltd., 2017c, Daikin Industries Ltd., 2018a).

Midea Group is headquartered in Shunde, Guangdong, in the People's Republic of China. It operates in the fields of consumer appliances, home appliance systems, as well as in the fields of industrial automation systems, robotics, and logistics. Midea counts 200 subsidiaries, over 60 overseas branches, and 12 strategic business units. Midea can be regarded as a Chinese MNE

(Midea Group, 2018b). In 2016, the company reported a revenue of 23,25 billion USD and counted 126.000 employees (Fortune, 2017).

Both firms were selected because they are MNEs, major players in the home appliance industry and fulfill the conditions of being private companies. They also established a presence in the European market previously. As expected, Daikin counts almost double the company age than Midea. Its presence in Europe precedes Midea's market entry by 10 years. Since Daikin's market entry into Europe occurred in 1970 and Midea entered the same market in 1980, the period of observation is set from 1970 – 2017 for Daikin and from 1980 – 2017 for Midea. Although Midea nowadays is much larger in employee numbers, this should not pose great difficulty for the comparability of both firms. Figure 4 summarized the case selection according to the discussed control variables.

	Company Age	Company Size	Major Industry Type	Ownership Structure	International Business Experience EU Market
Daikin Industries, Ltd.	94 Years (Daikin Industries Ltd., 2018a)	70.000 Employees (Daikin Industries Ltd., 2018a)	Home Appliances, Chemicals, Defense Systems, Electronics (Daikin Industries Ltd., 2018a)	Private Stock Company (Daikin Industries Ltd., 2018a)	48 years (1970)
Midea Group	50 Years (Midea Group, 2018b)	126.000 Employees (Fortune, 2017)	Home Appliances, Electronics, Logistics, Robotics (Midea Group, 2018b)	Private Stock Company (Chen, 2014)	38 years (1980)

Figure 4 Case Selection of Japanese and Chinese MNEs According to Control Variables

4.3 Method and Data Collection

The premise of this thesis is a comparative case study, based on qualitative and quantitative data. Comparative case studies are a highly suitable method to analyze differences, similarities, and patterns in internationalization strategies (Goodrick, 2014). The analysis of the selected cases focuses on country, industry and firm developments over time. To this aim country, industry and firm-level data for the selected cases and the European market is collected from databases, annual company reports, press releases, company websites, secondary literature etc. The data are then analyzed and interpreted according to the established eclectic framework, with the aim of comparing the Japanese and the Chinese firms regarding their similarities and differences in internationalization strategy for the European market.

Data for the indicators are collected from the sources listed in Figure 3, with a specific emphasis on collecting data from international databases, such as the World Bank, EuroStat or the OECD. Japanese Yen, Chinese Renminbi and Euro values are converted into current USD for better comparison. In some cases, indexes must be created to capture the developments in the European market and in the case of cultural distance, the Hofstede Index of cultural distance⁴. Firm-level data are primarily collected from company reports, websites and secondary literature for all available years. Limitations and data collection issues are explained in the discussion section.

5 Analysis

5.1 Country-Level Factors

5.1.1 Demand and Competition

The Japanese GDP per capita in 1970 was a multiple of China's GDP per capita. It increased at rapid rates throughout the 1970s and 1980s, with a 48% increase between 1985 and 1986. In the meantime, China's GDP per capita on average only grew at half the speed of Japanese GDP per capita. This resulted in an extreme disparity between the countries, which prevails to this day. Between 1990 – 1999 Chinese GDP per capita growth accelerated to 2,75 times the speed of Japanese GDP per capita growth. During the 2000s Japanese GDP per capita grew at smaller or negative rates, while China's GDP per capita continuously grew by as much as 29%, as seen between 2007 - 2008. While Japanese GDP per capita averaged at 0% between 2010 – 2017, Chinese GDP per capita grew on 11% on average. Japanese GDP per capita in 2017 was still more than five times higher than Chinese GDP per capita. Households and NPISHs final consumption expenditure further reveal interesting trends in terms of home market size. In 1970, the Japanese final consumption expenditure was nearly four times higher than Chinese household expenditure. Throughout the 1970s and 1980s, Japanese household expenditure on average grew twice as much as Chinese household expenditure. Chinese household expenditure started to grow at faster rates during the mid-1990s, finally overtaking Japanese household expenditure in 2012, since Japanese household expenditure was declining.

⁴ The index is calculated as $CD_{ij} = \frac{1}{4} \sum_{k=1}^4 ((I_{ki} - I_{kj})^2 / V_k)$ where I_{ki} or I_{kj} represents the score for the k_{th} cultural dimension of country i (j). V_k represents the variance of the score for the k_{th} dimension. CD_{ij} stands for the cultural distance of the i_{th} country with respect to country j , as demonstrated by Zhang and Xu (2017).

According to this data, the Japanese market in the 1970s was larger in size than the Chinese market, since GDP per capita and households and NPISHs final consumption expenditure surpassed China's GDP per capita and households and NPISHs final consumption expenditure. During the 1990s Japan's market demand grew at slower rates, while Chinese market size increased rapidly. China's households and NPISHs final consumption expenditure surpassed Japanese levels in 2012, but the Japanese GDP per capita remains larger to this day. Japan has the larger market in terms of GDP per capita since the 1970s, but China since the 1990s is catching up in market size. It already surpassed Japan in households and NPISHs final consumption expenditure.

The countries of the European Union, as the target market, were similar in GDP per capita compared to Japan in 1970 but displayed slower growth rates. Comparing GDP growth, the European market still underwent notable periods of dynamic growth between 1970 - 1973 (avg. 5% growth), between 1994 - 2000 (avg. 2,89% growth) and between 2004 - 2007 (avg. 2,77% growth). Around 2008, GDP per capita grew to more similar values in the EU with 38.163 USD and in Japan with 39.339 USD per capita. Japan retained a larger GDP per capita than the EU throughout the entire period of observation. China in the meantime displayed much lower levels of GDP per capita than both Japan and the EU. Household expenditure was continuously higher in the EU countries than in Japan and China. Especially since 2002, household expenditure in EU countries has been much higher compared to Japan and China. These trends reveal that Japanese GDP per capita exceeded European GDP per capita throughout the observation period. The EU market has still been a large and attractive target market since the 1970s, especially given its high GDP per capita compared to China and its higher levels of household expenditure compared to Japan and China.

The data on the concentration of the European home appliance market 1970 – 2017 reveals a change from a relatively concentrated market dominated by large US and Italian firms prior to 1970, to a less concentrated market after the entry of Japanese home appliance firms in the 1970s. In 1975, eight firms captured 40% of the European market. A decade later the market was more concentrated, with the top eight firms capturing 56% of the European appliance market. Three years later, a wave of M&A activities by larger firms led to a market concentration of 76% among the eight largest firms (Baden-Fuller & Stopford, 1991; Tagliabue, 1998; Tatsuki et al., 2015). According to Baldassarri (1992) and Segal-Horn, Asch, and Suneja (1998), the European home appliance market of the 1980s, and 1990s was oligopolistic in nature. The sub-sector of air conditioning in 1998 in comparison was less oligopolistic, with four firms controlling between 5 – 15% of the European market

(Commission of the European Communities, 1999). In the mid-2000s, the market concentration had again increased (Beynon, 2003). The entry of South Korean and Chinese firms into the global market in the 2000s was perceived to increase market competition (Tatsuki et al., 2015). By 2011, the European market was becoming more consolidated and increasingly concentrated, as the biggest 10 manufacturers captured 60% of the Heating Ventilation Air Conditioning (HVAC) market (DIE KÄLTE + Klimatechnik, 2013). In 2013, over 30% of the European AC market was dominated by three companies (Yu, 2014). The European home appliance market, especially the HVAC market, has undergone several periods of strong market concentration. Periods of concentration were followed by deconcentrating tendencies upon entry of new market players from East Asia. In the recent decade, the market was again concentrating, with no major new firms disrupting market concentration.

5.1.2 Socio-Cultural Conditions

While it would be advisable to compare the cultural distance scores at different points in time during the period of analysis, data are unavailable. It could be possible that the dimensions have changed considerably, but for the time being, this thesis treats the cultural dimensions as constant over time. The index of cultural distance between Japan and the EU calculates at 1,78 and the index of cultural distance between China and the EU calculates at 3,55. The Japanese score indicates less cultural distance with Europe compared to the Chinese score.

5.1.3 Political and Economic Conditions

Government intervention in the EU market, operationalized through the percentage of general government final consumption expenditure of GDP, reveals an increase in consumption expenditure in the 1970s from 16% in 1970 to about 19% from 1975 onwards. Consumption expenditure again increased 1980 – 1982, reaching stable levels of around 20% throughout the 1980s, and 1990s. The average share of government final consumption expenditure of GDP increased again in the 2000s, skewed by an 8% increase in 2009 to a share of 21,8%. During the 2010s, expenditure remained stable or decreased, reaching a final share of 20,3% in 2010. The trend for corporate tax rates during the period of observation reveals a trend of declining corporate tax rates in the EU between 1980 – 2017. The data is problematic due to strong variation between tax rates and the late inclusion of several states EU into the index starting from 1995. General trends can still be observed. For EU countries included in the index, corporate tax rates in the 1980s were much higher than at later points, reaching the overall maximum of 48,56% in 1982. Throughout the following decade, rates decreased to an average of 37, 87% in 1991. In 2001 this rate had lowered to 30,7% and in 2017 the average corporate

tax rate reached its low point of 21,9%. Although the pre-1995 data is incomplete, a trend of declining tax rates is observable. This suggests that the EU market, especially in specific countries with lower tax rates like Bulgaria, has become freer for firms. The share of the GDP of general government final consumption expenditure indicates that the government involvement was higher during specific times, possibly linked to crisis situations like the 1970s oil crises and 2008 financial crisis (Ozawa, 1979; UNCTAD, 2009). The long-term trend still seems to indicate relatively stable levels of government intervention outside of economic crisis situations.

Political openness in Europe was restricted during the 1970s and 1980s, as recession and unemployment burdened the economy. EU member states tended to their nationally sensitive and protected key sectors. They introduced voluntary restraint agreements, especially in the electronics, steel, agricultural and automotive sectors. They also introduced import surveillance and monitoring measures, with the number of measures in place increasing from 5 to 187 between 1973 – 1985. EU states further introduced quotas, restricted foreign investors, and introduced other trade restrictions (Hanson, 1998). During the 1990s EU members abolished the majority of third-party quantitative import restrictions, introduced no new anti-dumping measures, reduced tariffs and tightened rules for state industrial aid (Chang, 2004; Hanson, 1998). The European single market act came into effect in the 1980s, which led to industry regulations at the regional, instead of the national level. This reduced restrictions not only within the European market, but also for non-European firms active in the EU (Han, Liu, Gao, & Ghauri, 2018). Data on tariff rates for all products is available from 1988 onwards. Between 1989 and 1990 tariff rates increased sharply by 72% from 3,49% to 6,01%. They dropped to 3,54% by 1993. In 1995 tariff rates again spiked to 5,73%, dropping to 3,47% in 1997. Between 1997 – 2002 tariff rates spiked up to over 4%, before falling to relatively steady levels between 2 - 2,6% in the 2010s. Data from the OECD FDI Regulatory Restrictiveness Index is available for 1997, 2003, 2006, and 2010 – 2017. There was a visible trend of a FDI restriction reduction from a score of 0,079 in 1997 to a score of 0,026 in 2011. Especially the Czech Republic, Slovenia, and Poland reduced their score considerably since 1997. New initiated trade defense cases seem to have decreased since 1996, although provided data here is presented in hard to compare fashion. Anti-dumping measures and anti-subsidy measures in force declined on average 6% annually from 156 to 123 between 2004 and 2014 (European Commission, 2018c). Openness measured by exports plus imports over GDP calculates at an average ratio of 0,51 between 1975 – 1979. During the 1980s, the average increased to 0,55 and slightly decreased to 0,54 in the 1990s. In the 2000s, and 2010s, this average increased strongly to 0,69 and later

to 0,83. The collected evidence on tariffs, investment restrictions, anti-dumping, other defensive measures, and exports plus imports over GDP confirms the view of Hanson (1998), that the European market liberalized in the early 1990s. It erected fewer trade barriers, even in sensitive industry sectors, hence becoming politically more open. An acceleration of this political openness trend can be observed since the 2000s.

Political risk in Europe is difficult to measure before the 1990s, as the EU did not have its current shape. In the 1970s and 1980s, the then eastern countries of Hungary, Poland, Romania, Bulgaria, and Czechoslovakia were only starting to reform their economies (Vachudova, 2006). In the 1970s and early 1980s, European markets were considered relatively politically secure (Ersson & Lane, 1983). The EU is a diverse market, which means that it is difficult to maintain inclusive trends for political risk when using composite indices. The constructed composite EU index of the political risk index sub-category scores is problematic in measurement due to more countries being included with time. Variation between years of EU15 measurement and EU28 measurement on closer inspections have small variation, which means that they were treated as equals within this analysis. The constructed index measured political risk in the 1990s at an average score of 0,83. In the 2000s, this score decreased to an average of 0,81 and in the 2010s the score again decreased to 0,79. Especially the years between 2011 – 2013 received lower than average scores. Since lower scores stand for increased political risk, the European market on average has increased its political risk since the 1990s. These scores are however skewed negatively by decreasing scores in the sub-categories of regulatory quality and political stability and absence of violence in the recent decade. Despite recent increases in political risk evaluation, European countries and the EU market have been perceived as a relatively secure target market since the 1970s, bearing a similar risk to other developed country markets (PRS Group, 2018).

The favorability of **the legal regime and government policies** of the European market operationalized as measures of intellectual property right protection, reveals a gradual harmonization of patent laws, trademark protection and copyright laws through the European Patent Convention, Office of Harmonization in the Internal Market and through a number of directives among member and some non-member states during the 1970s, 1980s, and 1990s (Bently & Sherman, 2014). In 1994, the “community trademark” and in 2002 the “community design” were introduced as harmonized intellectual property registrations within the EU (Trimble, 2011). While the idea of “fortress Europe” shutting out Japanese investments in the late 1980s, and 1990s was widely discussed, Hanson (1998) finds only a few restrictive policies, such as trade barriers. EU policy, which was perceived impactful to East Asian home appliance

firms were the Directive on Waste Electrical and Electronic Equipment (WEEE) and Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) by the European Committee in the mid-2000s, which enforced strict labeling and energy consumption regulations on imported consumer appliances (European Commission, 2018a). These policies have been perceived as barriers by Asian home appliance firms (Daikin Industries Ltd., 2008; Midea Group, 2011). In the 2000s, and 2010s, several European countries like Greece, Portugal, Spain, the Netherlands, Sweden, the Czech Republic, and Hungary published favorable policies towards East Asian investments. An example of these policies is several Memoranda of Understanding (MoUs) and intergovernmental agreements between China and Greece. Other countries like Italy, France, and Germany have positioned themselves critically towards East Asian investments, propagating EU-backed investment screening mechanism for Chinese investments into key sectors of their industries (Seaman et al., 2017). Since 2017, the EU reached an “economic partnership agreement” with Japan, which aims at removing trade barriers (European Commission, 2018d) and is currently negotiating an “investment agreement” with China (European Commission, 2018b).

In sum, the European legal regime became increasingly attractive to outside investors, as it became increasingly harmonized over time. Despite popular notion, restrictive policies towards East Asian investors were not published extensively in the 1980s and 1990s. EU directives in the 2000s were perceived as restrictive towards the overseas home appliance sectors. While some European countries have produced favorable policy for East Asian investment, others are recently working towards a restrictive investment screening mechanism on the regional level. EU-level trade agreements have however liberalized the market for Japanese investors most recently, while a similar agreement with China has not been reached to this date.

Economic stability in the European market expressed by the inflation of consumer prices on average was at its highest levels in the 1970s with 8,47%, skewed negatively by the much higher inflation rates between 1974 – 1977. The average inflation rate in the 1980s was 7,53%. The early 1980s showed higher rates of consumer price inflation, averaging around 10%. The late 1980s were characterized by lower consumer price inflation rates of around 4%. In the 1990s average inflation of consumer prices was 4,15%, in the 2000s the average was 2,58% and in the 2010s the average was 1,35%. In years of economic crisis, like the oil crises of the 1970s (UNCTAD, 1997), economic stability in Europe expressed as consumer price inflation was negatively affected. Since 1985, the European economic environment was characterized by increasingly lower consumer price inflation rates.

The target country production factors of knowledge and technology resources, measured as patent applications by residents, were high in the European Union in the early 1970s but decreased 1% on average annually throughout the decade. Throughout the 1980s, patent application numbers on average remained the same. In the 1990s patent application numbers grew on average by 2%. In the 2000s and 2010s numbers remained relatively stable around an average of 107,57 patent applications by residents per year. In comparison to patent applications by residents in Japan, the number of patent applications in Europe exceeded Japan's number between 1970 – 1973. After 1973, Japanese residents continuously applied for more patents. Chinese residents' patent applications were lower in number compared to Europe until 2005, after which patent applications surged to nearly 12 times the applications submitted by European residents in 2016. European high-technology exports as a share of manufactured exports between 1988 – 2000 increased from 14,05% to 21,41%. Starting in 2000 the percentages fell to a low point of 13,71% in 2008, again rising to 16,34% in 2016. Japan's percentage continuously was higher and the Chinese percentage surpassed Europe's in 2001. Overall, researchers in R&D per million people and R&D expenditure as a share of the GDP increased in the EU since 1996. Japan since then had higher numbers of researchers in R&D and higher percentages of R&D expenditure than the EU, while China had lower numbers of researchers and expenditures in R&D than Europe until 2014. The availability of infrastructure in Europe measured by total natural resources rents as a share of the GDP increased from 0,2% in 1970 to 0,94% in 1981. While these rents stayed at levels around 0,9% until 1985, they decreased to 0,16% in 1999. Since 2000 the average percentage of resource rent as a share of GDP in Europe stayed at around 0,36%. Japan's shares of rents from natural resources were consistently lower than Europe's, while China's were much higher. The rail network in Europe grew in length between 1980 – 2000 and decreased again in length 2001 – 2016. The total train route in kilometers was consistently higher in Europe compared to China and Japan. Electric power consumption in kilowatt per hour per capita has also risen consistently in Europe since the 1970s. Electric power consumption in Japan was consistently higher since 1970s than in Europe and electric power consumption in China was lower since the 1970s. Regarding the availability and cost of skilled labor, the European Union improved its tertiary school enrollment in gross % from 17,32% in 1970 to 67,67% in 2016, with periods of strong growth between 1972 – 1974 and 1989 – 2003. Japanese tertiary enrollment rates were higher than Europe's between 1970 – 1991 and Chinese tertiary enrollment rates were consistently lower than European enrollment rates 1970 – 2016. Data is problematic for unit labor costs in the EU but reportedly decreased by 1,2% between 1975 – 1985 (European Commission, 1999). In the

1970s and 1980s, rising labor costs in developed countries generally led to a relocation to less developed countries (UNCTAD, 2010). 1990 – 1997, unit labor costs on average declined by 0,9% (European Commission, 1999). During the 1990s, and 2000s, the very low labor cost in eastern European countries, like Bulgaria and Romania, made these locations popular manufacturing sites in Europe (UNCTAD, 2009, UNCTAD, 2016). Since 1997, unit labor costs in the EU increased on average by 1,6% (European Commission, 2017; OECD, 2018). Eastern EU member states like the Czech Republic, Hungary, and Poland however still offered relatively attractive labor unit costs with developed labor skills (UNCTAD, 2004, UNCTAD, 2016). Japanese unit labor cost since 1996 still displayed negative growth until 2007 and in the following small or negative growth of unit labor cost (OECD, 2018). Comparable data is unavailable for China, but Chinese unit production cost is generally considered to be very low (Rui & Yip, 2008).

Based on the available data, Europe possessed knowledge and technology resources since the 1970s, which exceeded Japanese resources until 1972. China's knowledge and technology resources were lower than Europe's. China only caught up with European patent applications by residents, share of high-technology exports, R&D expenditure shares and researchers in R&D in the early to mid-2000s. Regarding the availability of infrastructure, Europe offered a widespread network of railway, some resource endowments (especially compared to Japan) and high electricity consumption, pointing to the accessibility of electricity. In terms of the availability and cost of skilled labor, Europe had high and growing rates of tertiary enrollment rates, which only surpassed Japan in 1991 but surpassed China's rates throughout the entire period of observation. While this indicates an increasingly skilled labor force, cost of European labor measured as unit production cost overall became more expensive in the 1970s and 1980s, with pockets of low labor cost in the southeast and eastern European countries in the 1990s, and 1980s.

5.2 Industry-Level Structure

5.2.1 Industry Structure

Industry size of the Japanese home appliance industry is difficult to determine based on the available data. Several different indicators are used to shape a picture of the industry size and its development over time, like the percentage of employees in the total workforce in manufacturing, gross value and output in household appliances and the number of employees in the household appliance industry when available. The percentage of employees in the total

workforce in manufacturing decreased from 27,4% in 1970 to 16,6% in 2012 (U.S. Bureau of Labor Statistics, 2018). Since 2012, the number of people employed in manufacturing has further declined (OECD, 2017). The overall gross value in household appliances generally declined between 2002 – 2014, but gross value added in refrigerating machines and air conditioning increased. While the number of employees in the household appliance industry declined from 84.034 employees in 2002 to 58.099 employees in 2014, employment numbers in air conditioning have remained more stable around an average of 28.953 employees. In 2003, Japan produced 21,13 million air conditioners at a value of 10,48 billion USD, while household appliances are not separately categorized. In 2016, Japan produced 10,41 million air conditioners at a value of 14,20 billion USD. It also produced electric consumer appliances at a value of 7,7 billion USD. This data can be interpreted to display a declining trend of the size of the Japanese manufacturing industry since the 1970s, and declining employee numbers in the household appliance sector. The subsector of air conditioners in the 2000s and 2010s had more stable employment numbers and an increasing gross value despite lower production output. Data on annual sales growth rates of the home appliance industry is not available and difficult to obtain for earlier periods. In the 1970s, the industry was however characterized by high demands for consumer electronic equipment, as the Japanese economy was growing (Yamada, 1990). By the mid-1980s, growth slowed down. In the following decades, sales growth flared up in certain years due to policy changes but overall declined in the Japanese market (Daikin Industries Ltd., 2014a). Due to incomplete data, it is also not possible to interpret industry stability conclusively. Productivity in the manufacturing sector in the 1970s was improved in large firms and was higher compared to productivity in the US (Dore, 2013; Hulten, 2007). The burst of the Japanese economic bubble hindered productivity improvement. In the 1990s, overall productivity growth slowed down substantially, with large MNEs remaining more productive due to overseas production. After a decade of low productivity improvements, productivity began improving again in 2000 (Fukao et al., 2016; Jorgenson & Nomura, 2007). Much of Japan's productivity improvement since the 1970s can be attributed to the automation of the electronics industries and the electronics sector remains one of the most productive sectors (Schneider, Hong, & van Le, 2018). Osaka prefecture in Japan is an industrial region, which has been shaped by large industry conglomerates like Sumitomo since before the Second World War. It is the location of several large home appliance manufacturers like Matsushita Electric Industrial, Sharp Corporation, Daikin Industries, and Sanyo Electric and their suppliers (Osaka Prefecture, 2006). According to the Japan External Trade Organization (JETRO) the region hosts many medium and small chemical and metal goods

manufacturers, who supply the electronics industry with their technologies. The region is a cluster of steel, machinery, device and electronics manufacturers (JETRO, 2017b).

The industry size of the Chinese home appliance industry is very difficult to measure in terms of employee numbers, as these numbers are not publicly available. Evidence on the industry size is obtained through several different indicators, like the percentage of employees in the total workforce in manufacturing and the output of home appliances. Looking at the percentage of employees in the total workforce in manufacturing, percentages have increased from 18,2% in 1980 to 28,8% in 2016. The share of employees in manufacturing has increased by 2% annually on average, with periods of higher increase 2004 – 2007 and 2010 – 2012. 3,7 million people were employed in the Chinese electronic equipment manufacturing industry in 2005 and by 2014, this number rose to 6,4 million people. The electronic equipment manufacturing industry between 2009 and 2014 was the third largest employer in manufacturing (METI, 2018). This data can be interpreted to signify, that the size of the manufacturing sector in China has grown since the 1980s, and that the subsector of electronic manufacturing has also grown during this period. In 1980, China produced 49.000 refrigerators, 7,24 million HVAC devices (fans) and 245.000 household washing machines. By 1990, numbers increased to 4,63 million refrigerators, 57,99 million HVAC devices (fans and air conditioners) and 6,63 million washing machines. By 2000, the industry was producing 12,79 million refrigerators, 18,27 million air conditioners, and 14,43 million washing machines. While there is no data on sales growth prior to 2010, increasing demand for home appliances in the early 2000s suggests that the industry was growing strongly at this point. In 2010, the Chinese home appliance industry put out 95 million air-conditioners, 70 million refrigerators and 50 million washing machines (METI, 2018). Between 2014 - 2015, the home appliance sector grew at around 2% and was described as mature with expected future growth rates between 3-5% (Ching & Shi, 2016). In 2016, China produced 80 million refrigerators, 1,42 billion air conditioners and 72,27 million washing machines (METI, 2018). While revenues appear to decline in recent years, based on differing sources, the output of washing machines, refrigerators and air conditioners indicates a growth of the industry over the years. There currently is no information available on industry productivity, however, Jefferson et al. (2008) find that firms in the coastal area, like Guangdong, had productivity advantages over firms from inner China. Since 2010, worries over the aging workforce of China have called for stronger automation to combat the decline in productivity in manufacturing industries (Ching & Shi, 2016). Although exact data on industry stability is not available, the analysis of Credit Suisse seems to indicate that the Chinese home appliance is a relatively stable industry, although sales growth declined in recent years. Shunde

in the Pearl River Delta of China is one of the countries' largest home appliance clusters, ideal for establishing buyer-seller relationships, common technology, common-customer relationships and common channel relationships in the same location. It is the home of several very large appliance manufacturers like Midea, Haier, Hisense-Kelon, Whirlpool, and Keda (Liu & Yang, 2013).

5.2.2 Industry Policies

The Japanese government started its program of “yen defense” in the early 1970s, which encouraged capital outflows and supported foreign direct investments. The government also offered special loans for overseas investments. The Ministry of International Trade and Industry (MITI) had a leading role in protecting domestic firms from foreign investments, so they could build up their own capabilities (Yang, Jiang et al., 2009). The official policy of MITI in the 1970s further became the restructuring of Japanese industry towards knowledge-intensive sectors (Ozawa, 1979). For Daikin, this meant that MITI was focusing its support of the chemical industry towards other industry segments (Tatsuki et al., 2015). During the second oil crisis in the late 1970s, the Japanese government published its “Energy Conservation Law”, directed at energy efficiency. MITI started a stimulus program for energy-conserving technology. These measures motivated the air conditioner industry to start the development of energy efficient products and led Daikin to cooperate with MITI in product development (Tatsuki et al., 2015). In the mid-1980s Japanese government decided to support firms in the metal, chemical, vehicle, and electronics business in becoming multinational, offering guarantees and incentives for market-seeking investment (Fitzgerald & Rui, 2016). In 1988, the government passed the “Law Concerning Regulations on Specific Substances for Protection of the Ozone Layer”, which installed licensing systems for chemicals needed in air conditioner manufacturing. In the following years, restrictions on the use of certain chemicals further increased (Tatsuki et al., 2015). Japan joined the WTO and the GATT in 1995 (WTO, 2018). The 1999 “Law for Pollutant Release and Transfer Register” led chemical firms like Daikin to install monitoring systems for chemical emissions. At the same time, government-supported M&As and technology-seeking investment abroad (Fitzgerald & Rui, 2016; Tatsuki et al., 2015). According to the “Revised Energy Conservation Law” of 2003, the government offered tax benefits for the installment of energy-efficient air conditioning equipment. Together with the 2005 extension of tax reduction on housing loans, Daikin and other home appliance makers profited from an upsurge in sales (Daikin Industries Ltd., 2004; Tatsuki et al., 2015). The 2006 “new economic growth strategy” of the government stressed firm development in innovation, which was more directed towards small to medium-size firms (Fitzgerald & Rui, 2016). In

2011, the government introduced its “Eco-point” subsidy program, which supported purchases of energy-efficient home appliances. The program was scaled back in 2012 (Daikin Industries Ltd., 2011, Daikin Industries Ltd., 2012). The government in 2013 also installed a new “green investment tax reduction” system for operators purchasing eligible energy efficient home appliances (IEA, 2017). The Ministry of the Environment and the Ministry of Economy, Trade and Industry since 2017 support commercial refrigeration and air conditioning manufacturers with subsidies for investing in energy-efficient refrigeration and air conditioning systems (JETRO, 2017a).

The Chinese government instated a new political direction regarding outbound investments and economic opening in 1979. Foreign investment was only allowed to state-owned firms until the mid-1980s. Government widened the permission to all enterprises with “sufficient know-how, capital, and suitable partners” in 1985 (Hong & Sun, 2006; Yu & Drauz, 2013). China entered the world trade organization (WTO) in November 2001, which reinforced its state policies of integrating with the international economy. To support internationalizing firms, the Chinese government relaxed foreign currency control. Chinese state-owned banks issued preferential loans to overseas investors in key industries in the mid-2000s (Child & Rodrigues, 2005; Schüller & Turner, 2005). Firms that fitted in the “national catching-up strategy” were supported through subsidies, preferential tax, and government guidance (Rubini et al., 2013). The Ministry of Foreign Trade and Economic Cooperation (MOFTEC) was an important factor in facilitating outbound investments in the 1990s (Yang, Jiang et al., 2009). MOFTEC, now the Ministry of Commerce of the People's Republic of China (MOFCOM), continues to support firms with information on market environments, taxation, laws, etc. in foreign markets (Schüller & Turner, 2005). Home appliance firms in Shunde from the 1980s onwards profited from access to capital and talent, granted by the support of the local government (Liu & Yang, 2013). The State Council and the Ministry of Science and Technology in 1988 launched the “Torch Program” for the development of high-technology industries in China, which aimed at developing the country through science and education and opening it to the international market. Under the policy, “key technology enterprises” were identified and supported by the state and local governments in their market development. Under the 1999 “go global” strategy of the Chinese government, strong Chinese enterprises, like the Shunde home appliance firms, were supported in their overseas investment. This also meant constructing industrial parks to develop native industrial designs in 2003 and 2009. At the same time, firms under the “Certificate of High and New Technology Enterprise” in Shunde profited from tax exemptions and government subsidies throughout the 2000s. In 2008, the “Home Appliances Subsidy Policy

for Rural Villages” and the “Light Industry Revitalization Planning” policies were implemented across China. The aim of the policy was to open rural domestic markets and secure medium to long-term growth for the home appliance industry. Under the motto of bringing “home appliances to the countryside” rural consumers would receive subsidies from the central and local government for purchasing eligible household products and swapping out old appliances. Under the “Notice on the Implementation of Energy-Saving Products and Waste Management Projects to Benefit Citizens”, home appliance firms producing energy efficient products further profited from state subsidies. In 2010, the Ministry of Industry and Information Technology (MIIT) and the State Council officially promoted the “development of industrial design” through talent training, innovation capacity, international exchange, and policy support. The “Residential Air-conditioner Energy Efficiency Upgrade” project was launched as a national research project under the “International Science and Technology Cooperation Program” of the Ministry of Science and Technology. In China’s Five-Year Plan 2011 – 2015, the Ministry of Industry and Information Technology announced policies for making China a leader in e-commerce, supporting environmentally friendly products and developing the home appliance industry. Concrete measures to achieve these goals were the creation of a “Government Procurement List for Energy Saving Products”, a “Green Appliances Subsidies” program and the “National Export Inspection Exemption by the General Administration of Quality Supervision” for specific certified household appliances. In 2012, the government announced the construction of 40 pilot cities, which would include products certified under the “Green Appliances Subsidies” program. In 2013, several beneficial policies for the home appliance industry were terminated. MIIT continued to support the industry through the “Project for Energy Saving & Benefit to People”. Under the “Made in China 2025” strategy of 2015, the Chinese government started to support the automation of the industry, offering subsidies for companies investing in robotics. It also invested in a robotics R&D institute in Foshan (Shunde). The subsidy program of “Energy Top Runner” further supported energy efficient products with free publicity. Since 2017, the Chinese government has offered special support to overseas investments aimed at modernizing production and improving value chains (Seaman et al., 2017).

5.2.3 Industrial Competition

The Japanese home appliance industry of the 1970s developed from cooperation with US firms in the 1950s and 1960s. Daikin had secured a monopolistic market share in refrigeration chemicals in Japan. In the mid-1970s several Japanese competitors emerged and increased market competition (Tatsuki et al., 2015). In the 1990s, Japan’s home appliance industry was highly concentrated with six firms controlling 95% of production (U.S. International Trade

Commission). The air conditioner market became less concentrated, as Chinese and South Korean firms rapidly expanded their market share in Japan. In the chemical business, the numbers of global manufacturers dropped from 30 to 10 in 1995. As market shares increasingly concentrated with large firms, the market became less competitive (Tatsuki et al., 2015). The Japanese home appliance market came to be controlled by the large firms Toshiba, Mitsubishi Electric, Hitachi and Panasonic. In 2013, Panasonic held 25% of the room air conditioner market, Daikin 18%, Hitachi 13%, Mitsubishi 13% and Toshiba 8,7% (Nikkei Sangyo Shimbun Newspaper, 2013). The market was oligopolistic, with 77,7% of the market controlled by five firms. In 2016, Daikin held around 40% of the commercial air conditioner market, while the home appliance market continued to be heavily concentrated (Daikin Industries Ltd., 2017a). Japan's home appliance industry was strongly concentrated in the 1970s and 1980s until Chinese and South Korean manufacturers entered the market. In the 1990s Japan's home appliance industry again became strongly concentrated.

In the Chinese home appliance industry, the competitive pressure was rising throughout the 1980s, driving firms to internationalize through exporting (Cortesi, 2011). In the Chinese market of 1996, 93% of the refrigerator market was controlled by Haier, Meiling, and Rongsheng. 58% of the air conditioner market was controlled by Haier, Glee, and Kelan. 83% of the washing machine market was controlled by Little Swan and Rongshida (Tse, 1998). The home appliance market was hence strongly concentrated. By 2004, Midea had become one of the three largest air conditioner brands and many smaller brands with small scale-operations dropped out of the market (Shih, 2004). By 2007, the top three brands controlled 62,4% of the domestic market share in air conditioning. In HVAC the top five brands held 74,2% of the domestic market share (Midea Group, 2007), making industry highly oligopolistic. The trend of market concentration continued in the following year, resulting in even higher market shares of domestic air conditioner brands (around 70%) and steady market shares for foreign firms (20-30%) (Midea Group, 2008). By 2014, Midea held 35 – 40% of the domestic small home appliance market and above 20% market share in large home appliances (including air conditioners). Especially the domestic HVAC market since 2014 developed into an oligopoly, with Midea, Haier, and Gree holding around 70% of the domestic market share, while 52% of the domestic washing machine sales were divided between Midea and Haier (Wang, 2014). The Chinese home appliance industry since the 1980s has become heavily concentrated with a few major firms controlling large shares of the domestic market.

5.3 Firm-level Factors

5.3.1 Firm Size

Firm size, measured by the number of employees at Daikin, was counted at around 6.000 throughout the 1970s and 1980s, with some major incisions due to the 1970s oil crises. The company reduced its number of employees from 6.350 in 1974 to 5.799 in 1979 (Tatsuki et al., 2015). In 1996, at times of favorable economic development in Japan, Daikin increased its size to 13.246 employees. Between 1996 – 2004, the firm grew 3% on average annually. Between 2005 – 2009 Daikin grew rapidly, increasing the number of employees by 52% from 21.996 in 2006 to 33.480 in 2007. Despite a reduction of 3% in 2010, Daikin continued to grow until 2017 to its maximum size of 67.036 employees. Firm size expressed as revenue in current USD increased rapidly year-on-year between 1970 – 1974, by as much as 33% between 1973 – 1974. While Daikin was hit by a 26% loss in revenues connected to the oil crisis in 1975, it steadied its revenues from 1977 onwards. In 1987 Daikin had increased revenue by 400% compared to 1972. From the mid-1980s until 1997, Daikin experienced a relatively steady increase in revenue of around 12% each year. Between 1998 – 2000 there was small or no growth in revenue. Between 2001 – 2008, revenue grew at faster rates again, reaching 11,62 billion USD in 2008. In 2010, revenue dropped by 15% and then slowly recovered until 2014, when Daikin reported a revenue of 16,05 billion USD. In 2017, Daikin reported a revenue of 18,4 billion USD. Both Daikin's number of employees and firm revenue display similar trends for firm size. 1970 – 1980 Daikin was a large company with around 6.000 employees and steadily (at times heavily) increasing revenues. 1990 – 2006 Daikin grew strongly in size, quadrupling its number of employees and nearly doubling revenues. 2006 – 2017 the firm experienced setbacks in revenue growth but overall continued to grow into a very large multinational enterprise with over 60.000 employees worldwide in 2017.

Regarding firm size, the data is insufficient for Midea between 1982-2001 and data varies among the company and non-company sources. It is known that firm founder He Xiangjian started operations in his bottle lid production workshop with 23 workers in 1968 (Midea Group, 2018c) and that the company employed 180 people in 1980 (Cortesi, 2011). Firm balance sheets show that Midea increased its number of employees to 13.365 by 2001. In 2004, Midea increased its workforce by over 100% to 43.028 employees but reduced these numbers to half of its size in 2005. In 2006 Midea again increased staff numbers to 39.198. Overall, employee numbers between 2004-2015 show a fluctuating pattern, where numbers increase by over 60% in some years (2010 and 2013) but typically are readjusted in the following years. In 2012 and

2013, Midea reduced its almost 100.000 employees of 2011 to around 67.000 employees. In 2017 employee numbers rose to 130.000. Firm size expressed as revenue increased strongly from 14,58 million USD in 1990 to over 800 million USD in 1999. Between 2000 – 2008 revenues grew 29% on average. Growth alternates between years of moderate growth, like 2002 with a rate of 3%, years of extreme growth like 2006 with a rate of 99% and years of negative growth like 2007 with -17% growth. In 2009, Midea's revenue grew by 4%. The period between 2009 – 2014 overall was characterized by an average growth rate of 22%. In 2015 revenue decreased for the first time since 2007, but due to a 51% growth in 2017 revenues last amounted to 36,29 billion USD. Both the number of employees and firm revenue indicates that Midea's firm size increased strongly in the 1980s and the 1990s. Despite incomplete data for values between 1980 – 1999, Midea transformed into a very large firm during this time. While the number of employees fluctuated over the years, Midea in 2017 has ten times as many employees as in 2001. The firm increased revenues from 800 million USD in 1999 to 36,29 billion USD in 2017.

5.3.2 Product Features

Based on the EU high-tech classification of manufacturing industries of NACE Rev. 2 3-digit level, Daikin produced at the medium- to high-technology product level between 1970 – 2017. It manufactured electronic products, chemicals, ammunition, electrical equipment, and manufacturing equipment (EuroStat, 2018a). Some of its products, especially household appliances like air conditioners, require pre and post-purchase service (MacBryde, Radnor, Saccani, Songini, & Gaiardelli, 2006). Originating in its experience with fluorocarbon production, Daikin had acquired the necessary knowledge, through licensing and cooperation with US companies, to produce air conditioning and cooling products by 1970 (Tatsuki et al., 2015). During the 1970s, the air conditioning business accounted for over 70% of total revenue, the hydraulics business for 10 – 12% and the chemical business for 13 – 15% of total revenue. Daikin was successful with its highly differentiated ceiling-suspended room air conditioner “SkyAir” series, but only had two patents granted in Europe during the 1970s. It lacked adaptation ability, since its decision-making processes were highly centralized, and its technical capability still relied on the transfer of technology through cooperation with western firms (Tatsuki et al., 2015). During the 1980s Daikin introduced Variable Refrigerant Technology (VRV) in its air conditioners, of which it was the only manufacturer in Europe in the early 1980s. It further developed a highly differentiated non-Chlorofluorocarbons (CFC)-type cleaning agent for its chemical business. In the late 1980s, Daikin's product portfolio shrunk. Daikin terminated the robot and automation business system it had established to improve its

in-house production. Product differentiation during the 1980s was improved, as higher numbers of patents were granted to Daikin in the EU market. On average, Daikin published 25,6 new patents in the EU per year between 1980 – 1989. Adaptation ability in the 1980s remained underdeveloped, as the rethinking of organizational structures only started in the late 1980s. During the 1990s, Daikin had to withdraw from some of its product segments, such as robotics, which it had briefly attempted to revive, medical equipment and other electronic hardware product segments. It introduced highly differentiated products such as the HFC134a refrigerant, HFC32 refrigerant, and its “Ururu Sarara” air conditioner. In the air-conditioning business, Daikin considered differentiation of its products especially important. In the 1990s Daikin reached an average of 48,8 new granted patents per year in Europe, improving its overall product differentiation. Adaptation ability was also slightly improved as dynamic capability became more important and Daikin attained a good reputation for its technological abilities. In the 2000s, the share of the air conditioning business of total sales rose from 74,3% to 88,1% in 2009. The share of the chemical business in the meantime declined from 17,7% to 8,5%. The most important products in Europe during that time were heat pump “Altherma”, commercial Ve-up Q multiple air-conditioning systems and “Ururu Sarara” air conditioner. These products were highly differentiated and adjusted to the environmentally minded European market. Differentiation was also strengthened by an average of 67 new granted patents in Europe during the 2000s. Adaption ability improved significantly with a shift towards customized products for local markets and improved support for technological capabilities. Between 2010 – 2017 Daikin differentiated itself in the European market through the sale of energy-efficient products based on its HFC32 refrigerant technology, while the percentage of the air conditioner business in revenue grew from 88,7% to 90%. Due to Daikin’s ability to produce many of the needed components and chemicals for its home appliance equipment in-house, it had specific advantages in developing differentiated products in this business. Positive developments in differentiation are underlined in rising brand valuations, from over 1,1 billion USD in 2010 to 1,34 billion USD in 2016. Daikin also reached an all-time high of 101,78 new granted patents on average per year in Europe. Adaptation ability was severely improved by Daikin’s policy for speedy product development, marketing strategies tailored to local markets and maintaining a stable environment for technological capability development.

In sum, Daikin’s product throughout the entire period of observation can be characterized as medium- to high-technology products. The data indicate that Daikin’s products during the 1970s were not highly differentiated and lacked adaptation ability. An emphasis in the product portfolio was placed on the air conditioner and chemical business. Starting in the 1980s Daikin

developed highly differentiated chemical and air conditioning products, which still lacked adaptation ability. Throughout the 1990s, Daikin's product portfolio concentrated on chemicals and air conditioners, as e.g. robotics could not be maintained in the portfolio permanently. In the 2000s, Daikin's business became even more concentrated in the HVAC segment, as it developed highly differentiated products adapted to the environmentally minded European market. A trend of improved differentiation and adaptation ability continued throughout the 2010s when Daikin published increasingly more patents annually and increased its brand value.

Based on the EU high-tech classification of manufacturing industries of NACE Rev. 2 3-digit level, Midea was continuously manufacturing medium-high-technology level products between 1980 – 2017. Midea produced electronic products, electrical equipment, and optical equipment throughout the period of observation (EuroStat, 2018a). The firm entered the home appliance industry when it started to produce electrical fans in 1980 (Cortesi, 2011). It added products that required pre- and post-purchase service to its product portfolio when it started producing air conditioners in 1985 (MacBryde et al., 2006). During the following years, Midea gradually used technology imports from foreign firms to add air purifiers, rice cookers, range hoods, electric heaters, compressors, micro-motors, microwave ovens, etc. to its product portfolio (Cortesi, 2011). It is unlikely that these appliances were greatly differentiated as the technology was acquired entirely from other firms and Midea possessed no published patents in Europe in the 1980s. Adaptability, measured by the firms dynamic and technological capabilities, was also not well developed. Midea only started to improve technological capabilities in the mid-1990s, and dynamic capabilities were constrained through highly centralized decision making. In 2001, the firm started manufacturing Variable Refrigerant Flow (VRF) air conditioners, dishwashers, and water dispensers (Midea Group, 2018c). The 2004 joint venture with Toshiba-Carrier led Midea to the production of high-end air conditioning products under Toshiba's brand channel for the European market. The acquisitions of Hefei Royalstar, Jiangsu Chunhua Electric Group, and Hefei Hualing Co. Ltd. led Midea to enter the washing machine, vacuum cleaner, and refrigerator business. Between 2006 – 2010 the focus lay on introducing high-end models in household air-conditioning and air-conditioning compressors, as well as developing proprietary washing machine, refrigerator and refrigerator compressor technology. The DC inverter technology for air conditioners, introduced during this time, was more differentiated due to its low energy consumption and environmentally minded refrigerants. Midea was generating 87% of its revenue in 2001 and 91% of its revenue in 2010 from its home appliances. Overall product differentiation was lacking, since Midea only published one patent in Europe between 2001 – 2010. Since the firm was improving its technologic capabilities in the 2000s it

also improved product adaptation abilities. A new product upgrading strategy started in 2011 with the launch of Midea's innovative full-DC inverter air conditioners. The firm also introduced innovative new washer-dryer, microwave oven, electric rice cooker, and range hood products in 2013. In 2014, Midea released its intelligent "All DC Inverter V5X" air conditioner model globally. It developed differentiated products such as a high-technology heat-pump water heater, the TR series DC inverter air conditioner, H type module machine series and the North American wind machine. 2015 - 2017 Midea entered the business field of robotics and industrial automation with the KUKA AG and Servotronix acquisitions and the Yaskawa joint venture. The overseas acquisition also enhanced the product portfolio with the technologically more sophisticated products of Toshiba and Clivet. Midea entered the field of smart home appliances, concentrating on developing innovative smart appliances in the air conditioner, kitchen and laundry segments. In 2011, large home appliances accounted for 42% of firm revenue (air conditioners accounting for 33,4%), small appliances for 15% of revenue, and the refrigerator and washing machine segments each for about 4% of revenue. In 2017, air conditioner products accounted for 36,9% of revenues, consumer appliances for 42% and robotics and automation systems for 11,2% of firm revenue. Regarding the development of product differentiation, Midea throughout the 1980s, 1990s, and most of the 2000s, manufactured few internationally differentiated products. In Europe, it did not publish a patent until 2006. Within the domestic market, Midea had differentiation advantages in the late 2000s, where it published around 1000 patents, especially with its DC- inverter technology. Starting around 2012, Midea emphasized stronger product differentiation, leading to differentiation in the large and small home appliance segments through acquisition, strategic alliances and in-house innovation efforts (Liu & Yang, 2013). Starting in 2012 with five published patents in Europe, it published 27,33 patents on average per year until 2017. Air conditioners and other home appliances were differentiated through adding smart systems, alternative refrigerants (licensed from US firm Tritan), as well as licensing from the Disney brand. This strive for differentiation is also reflected in increasing brand value from 175 million USD in 2001 to 2,79 billion USD in 2017. Regarding product adaptation ability, Midea was heavily upgrading its technological capabilities during this time and starting to develop dynamic capabilities.

The data indicate that Midea was unable to produce highly differentiated products and showed very little adaptation ability during the 1980s, and 1990s. The firm still worked continuously to widen its product portfolio. In the 2000s, Midea improved differentiation in the domestic market, but still lacked adaptation ability in foreign markets. The product portfolio was enlarged through acquisitions in the domestic market. Starting in 2012 product differentiation improved,

especially in the air conditioner, small appliance and robotics segments. Brand value increased rapidly between 2001 – 2017. In Europe, Midea's efforts for creating differentiated and adaptable products for the local markets increased in the last few years. The product portfolio has been impacted by the adoption of the robotics business, which accounts for over 11% of revenues since 2017.

5.3.3 Strategy

1970 – 1977 Daikin followed the strategy laid out in its second seven-year long-term business plan. The plan specified on numeric goals for growth, development of human resources, the establishment of management information system, cost reduction and the preservation of the environment. Global strategy at the time was limited to Europe and the establishment of Daikin Europe N.V. (DENV) in Belgium. In terms of strategy aggressiveness this can be characterized as a fast and high commitment entry mode, capturing market share in the small European AC business and especially in the commercial VRV business. Between 1977 – 1980 Daikin followed “Vision 55” business plan, which aimed at strengthening the business structure and remodeling corporate structure. European strategy at the time could not be characterized as aggressive, as no new market entries took place and competition over market shares with US and Japanese firms increased. “Vision 60”, the five-year plan of 1980, fostered leadership development and sales and service network development in local companies and emphasized technology development (Tatsuki et al., 2015). “Vision 65” (1985 – 1989) also highlighted technological development for firm success. The regional strategy was refined by dividing the overseas business into eight zones for a quicker market response. Cost-competitiveness was to be improved by refining overseas production technology. During the first half of the 1980s, the European market was treated with less aggressive strategies, but Daikin switched to an increasingly aggressive strategy in the late 1980s since market unification was being prepared. “Vision 95”, the five-year plan prepared in 1990, focused on improving firm value and increasing profitability, improving systems for global business, improving firm capital, relocating staff, capital, and managerial resources. In terms of global strategy, Daikin started an “all-out strategy” for developing or entering new markets. In Europe, firm strategy concentrated localizing products by boosting production capacity in Belgium. It pushed for a top market share in air conditioning. It also sought to reorganize its sales and distribution structure by first appointing distributors in each country, then turning them into fully-controlled subsidiaries one after another. By applying this aggressive entry strategy, Daikin speedily entered several European countries through high commitment entry modes throughout the 1990s (Tatsuki et al., 2015). “Fusion 21” and its updated version “Fusion 21D” (1996 – 2000)

answered to the challenges of the economic crisis in Japan at the time, by focusing on eliminating unprofitable businesses, streamlining, reducing cost and growing global business. The goal was to become the world leader in air-conditioning and number two in fluorochemicals. To achieve these goals, Daikin aggressively developed its chemical business in the US, China, and Europe and aimed at lowering costs through AC component production at its Thailand production facilities. Activities into the European market can be characterized as aggressive, as several high commitment entry modes were carried out in European countries for the chemical and air conditioner businesses. “Fusion 05” (2001 – 2005) set the goal of becoming number two globally by expanding overseas ratios and becoming a “global top-tier company”. Daikin’s goals included the expansion of sales volume, further localizing production, increasing market share, expanding markets, cutting cost by supply chain integration, production at the low-cost facilities, as well as differentiating and localizing products through technology development. In Europe, Daikin emphasized the development of localized products fit for the environmentally minded consumers, improvement of marketing and distribution capabilities through the acquisition of former agents, building new production bases for reducing exchange-rate risks and getting closer to the local markets. This strategy can be characterized as aggressive, as Daikin explicitly sought to increase European sales through quick and highly committing entry modes. Daikin managed to increase market shares in air conditioning by 5%. The “Fusion 10” Daikin strategy (2006 – 2010) especially highlighted the acceleration of M&As and the expansion of the environment-related business. Improving sales, gaining market shares, expanding into new business segments, maximizing corporate value, improving service, higher profitability, a solid financial position, and product differentiation were important themes during the “Fusion 10” years. In Europe, Daikin’s aggressive M&A strategy was aimed at increasing market shares through differentiated, environmentally minded products. These products were promoted through the integrated capabilities of acquired firms (e.g. the heating business of Rotex) and an even wider network of newly acquired sales subsidiaries. The “Fusion 15” strategy (2011 – 2016) developed a focus on emerging markets, volume zone markets, environment-related innovation, and localized products. Apart from its strategy for emerging markets, mature markets were to be expanded through country-specific strategies of highly differentiated and localized products in European countries with better economic conditions. European countries with slack economic conditions were to be targeted with price-competitive volume-zone products. An improvement of after-sales service business was strategized for mature markets. Daikin also kept up its relatively aggressive M&A strategy, acquiring several European firms for quick market entry into new product segments. Daikin’s

latest “Fusion 20” strategy includes a reduced version of strategic themes of “Fusion 15”, looking to strengthen new businesses in the environment sector, creating differentiated technologies and products and fostering a competitive cost-structure within the organization. In summary, Daikin’s global and European strategy remained limited to the operation of DENV throughout most of the 1970s and 1980s. In the late 1980s, Daikin started to employ an increasingly aggressive market entry strategy in Europe, expanding sales and production through high commitment and rapid market entry modes and increasing market shares in its top businesses. Since “Fusion 10” plan, Daikin has concentrated on localized, environmentally-friendly products for the European market. The firm most recently is looking to solidify its position through differentiated and cost-competitive products in the European market, supported by strategic acquisitions into new business segments. This is evidence for a strategy of product adaptation.

Midea’s global strategy is outlined by slim data throughout the 1980s, and 1990s, but strategic orientation seems to have been outlined according to five-year plans. Since Midea’s entry into the home appliance industry in 1980, international expansion through exporting and OEM was mostly regarded as the way to grow revenue. This strategic focus on growth throughout the 1980s is interpreted as a protective strategy against western firms entering the Chinese market after its economic liberalization (Cortesi, 2011). While Midea entered the European markets mostly through the speedy entry mode of OEM, its international strategy can be characterized as non-aggressive since this entry mode is low in commitment. OEM allows no insight on the market share the products would fetch under its OBM names. The strategic focus on domestic market sales, profit and growth continued throughout the 1990s but was combined with a strategic focus on multilevel cooperation with international firms, which would allow Midea to diversify its product portfolio and produce more differentiated, technologically advanced products. Since this cooperation was mostly limited to the Chinese market and the focus remained on OEM, global strategy is still characterized as low in aggressiveness. In the 2000s Midea adhered to its strategic orientation on profit earning, internationalization and product upgrading. To reach these goals, Midea aimed at reducing operational cost, improving management efficiency and improving overall human resources (Midea Group, 2001, Midea Group, 2004). For its international strategy, it refocused on the localization of its products overseas through overseas subsidiaries and brand name building (Deng, 2004). Midea was further entering the European market with differentiated air conditioner products, which were produced in a joint venture with Toshiba-Carrier. The firm launched a strategic plan of “technology-driven, operational excellence, globalization” in 2007. The plan emphasized

market expansion and localization of products through “proprietorship and joint venture” motives in Europe, improvement of local management organization (Midea Group, 2010) and greater scale and market share of self-owned brands. Midea aimed at becoming a “world class company” and at following a “technology-driven” strategy for more diversified products. In the mature overseas market, Midea introduced strategies of hybrid operation of multiple modes (OEM and own-brand exports). It sought to promote international transformation and overseas expansion in a proactive manner. Midea had rapidly gained market share for some of its products and held top market share in the domestic market. Due to its strategic focus on proactive entry and hybrid operation, as well as the addition of rapid high commitment entry modes, Midea’s strategy in Europe can be characterized as more aggressive than before. During the following decade, starting in 2011, Midea’s strategy was heavily influenced by the themes of localization, increasing market share and expanding markets, increasing profit and reducing cost, creating differentiated products, expanding marketing networks and improving management structure. The three strategic themes “product leadership, efficiency drive, and global operation” marked a new focus away from competing for market share at a low cost towards brand building and product competitiveness. In 2014, the strategic theme of “333” focused on becoming a global top home appliance brand, developing better products and consolidating operation quality, was released. The new themes “business strategy, internet strategy and globalization strategy” further point to the new focus on differentiated smart home appliances and e-commerce since 2014. In 2015, a two-year development plan advanced this strategy to the “double smart strategy”, focused on smart home appliances and intelligent manufacturing. Regarding its global strategy, Midea announced that its strategic intent was to switch from OEM to operating its original brands in local markets. For the European market, this strategy resulted in a mix of high profile M&As, new subsidiaries and continuing OEM, which still accounts for 70% of overseas revenue. One example of this new strategy was the acquisition of a majority equity in Italian Clivet, which allowed Midea to gain market share, manufacture new products locally and use existing marketing channels in Europe. While the continuously high shares of OEM in overseas revenue are a counter-argument, Midea’s strategy in Europe since 2011 has become much more aggressive, due to an increased number of high commitment, speedy market entry modes. This reflected in an increase in global market share from 3,9% to 5,5% in 2017.

In summary, Midea developed its strategy in the European market from a relatively non-aggressive “growth-through-export” strategy in the 1980s, and 1990s, to a slightly more aggressive global strategy. This strategy during the 2000s unified the development of its own

brands, through localization and product differentiation, with continuous export strategies. Since 2011, Midea's strategic focus has become more aggressive and focused on high commitment market entry modes. Midea aims at proactively reducing OEM exporting for the sake of differentiated original product expansion in mature markets. In the European market, Midea's recent efforts for increased product adaptation emphasizes its goal to change from a product diversification strategy to a hybrid or product adaptation strategy.

5.3.4 Firm-Specific Capabilities

Integration into a business or production network

Before the Second World War, Daikin had been associated with the Sumitomo Zaibatsu (Hast, 1991; Kensy, 2001). In the mid-1950s, OKK (as Daikin was called at the time) sought to renew the ties with Sumitomo Metal Industries (SMI). Senior managing staff often was recruited from SMI (Tatsuki et al., 2015). In the 1970s, Daikin president Yamada was connected with the president of Sumitomo Metal Industries, Ltd. and the president of Sumitomo Chemical through Kansai Association of Corporate Executives (KACE) (Tatsuki et al., 2015). In 1973, SMI held 18,9%, Sumitomo Bank 4,4%, Sumitomo Chemical 4,3% and Sumitomo Life Insurances 2,8% of Daikin shares (Shinposha, 1974). Daikin Kogyo throughout the 1980s was considered a major subsidiary of Sumitomo Group (Okimoto & Rohlen, 1988). In 2018, Sumitomo Mitsui Banking Corporation only held 3,1% of Daikin stock (Daikin Industries Ltd., 2018c). Over time, Daikin entered JVs with many companies within the same industries, as well as establishing capital ties with former suppliers. Examples are alliances with Matsushita Electric Industrial Co., Ltd. in 1999 and Trane Company of the United States in 2003, Arkema of France in 2006 and Gree of China in 2008. Panasonic (as Matsushita is named since 2008) was one of Daikin's major shareholders between 2004 – 2012 and in 2016 Daikin announced that it considered entering mutual supply and procurement of core parts with Panasonic (Daikin Industries Ltd., 2004, Daikin Industries Ltd., 2006, Daikin Industries Ltd., 2008, Daikin Industries Ltd., 2009, Daikin Industries Ltd., 2010; Nikkei Asian Review, 2016). It is apparent that Daikin was engaged in equity-based alliances with business groups and suppliers of the same industry since the 1970s and has maintained this strategy to ally with leaders from the same industry, while ties with its original Zaibatsu Sumitomo have weakened.

Midea was founded in the village of Shunde, located in the Pearl River Delta, China's prime hub of the home appliance industry. This geographic environment is characterized by a strong production network of domestic market-oriented firms (Liu & Yang, 2013). In addition to this geographic embeddedness into a production and supplier network, Midea has fostered

equity-based relationships with several business groups of the same industry. In the 1990s, Midea entered a strategic cooperation with Toshiba, Sanyo, Panasonic, NAIS of South Korea and Merloni Progetti of Italy. In 2001, Guangdong Meizhi Refrigeration Equipment Co., Ltd. and Guangdong Meizhi Motor Co., Ltd. of Toshiba, as well as Shunde Midea Dishwashing Co., Ltd. of Merloni Design were minority stockholders at Midea. Through these equity-based associations, Midea was able to enter entirely new product segments and update its established product segments. In the 2000s, Midea was one of the largest OEM producers globally, associated with a wide variety of firms within the same industry, like Samsung and Bosch-Siemens, and involved in multiple equity associations with firms like Toshiba-Carrier, Sanyo, Horizont of Belarus and Italian Indesit in a variety of product segments. In the 2010s, Midea established JVs with Bosch Thermotechnik GmbH, Japanese technology firms Siix and Yaskawa, South Korea's Lihom Cuchen and AEG of Swedish Electrolux. Midea further integrated into business networks via its KUKA AG, Servotronix and Clivet acquisitions, and fostered its integration with “smart home” business firms like Xiao Mi (holds 1,29 % of shares in Midea), Alibaba, Huawei, COFCO, IBM, and OnStar. Midea is tightly integrated into the Shunde business networks of home appliance manufacturers and has actively pursued equity-based association with national and international firms in newly developing product segments.

Sourcing and Price Value Capability

The Japanese economy was hit with rising consumer prices in the mid-1970s, wages in Japan increased and product prices had to be adjusted upwards. Daikin during this time especially sought to create more efficient operating systems for the sake of cost reduction during the 1980s. The firm was at the forefront of automation, employing robotics, automated warehouses, and worker free operation lines to achieve 90% automation by 1991 (Tatsuki et al., 2015). To improve price value capability, Daikin started to import supply parts from Southeast Asia to its Japanese and European production sites in 1997. One of the main issues Daikin had, was its inability to produce low-priced products at a volume at the time. It established Daikin Industry Ltd. (DIL) in Thailand to lower costs. In the European market, Daikin was struggling with the high labor costs of its Belgium production site and shifted production first to Thailand and later to the production sites in the Czech Republic. The OYL M&A in 2006 was aimed at using OYL's low-cost production and distributing systems. One major motivation for a JV with Gree in 2008 was Gree's ability to produce large volumes at very low prices and to source parts locally at cheap prices. Through the integration of its supply chain, Daikin has also achieved cost reductions. The firm integrated its supply chain of fluoroelastomer, producing a large share of its parts in-house and employing a streamlined supply chain management process in Europe.

The acquisition of several filter manufacturers, such as AAF and Dinair, also led to considerable cost reductions in the filter segment. The acquisition of Heroflon, which had been supplied by Dinair, further integrated supply chains. Daikin always struggled to offer products at low prices but has taken several steps to improve its sourcing and price value capability. In recent years, Daikin is trying to improve by producing close to target markets, learning from low-cost production firms and applying a centralized purchasing and production system.

Developed sourcing and price-value capability allowed Midea to offer its products at a comparatively lower cost compared to its non-Chinese competitors in the 1980s, and 1990s. The firm established motor and driving system supplier Welling Holding, which it controlled. Besides integrating its supply chain through Welling Holding, Midea's relationship with Toshiba in the 1990s evolved from purchasing of components to a joint venture with Toshiba-Carrier in 1998. This allowed Midea to vertically integrate its supply chain for air conditioner production. In 2001, Midea similarly integrated its supply chain for microwave production after acquiring magnetron technology from Sanyo. Around 2003, Midea was lowering prices annually, as labor was cheap in China. In the 2000s, Midea also fostered strategic partnerships with many of its suppliers in Shunde, like Foshan Shunde Baiyin Technology Co., Ltd. and Foshan Shunde Bainian Tongchuang Plastic Industrial Co. These firms allowed Midea to build a stable and affordable supply chain. Additionally, Midea established an electronic and a mold company in 2010 for strengthening its supply chain. At the end of the 2000s, Midea needed to raise product prices, as labor and material costs increased. During the 2010s, Midea worked on presenting itself as a "best-cost supplier" instead of a low-cost supplier. It profited from its extensive supply chain integration and launched its plan for large-scale automatization, by integrating the robotics through the Yaskawa JV and the KUKA AG and Servotronics M&As in 2017. Through automatization, Midea aims to maintain prices at a 2015 level (Pillai, 2018). Supply chain integration by licensing from chemical firm Eastman, as well as the acquisitions of Toshiba Lifestyle division and Clivet further create supply chain synergies for Midea since 2016. Midea has suffered setbacks in its ability to pricing ability since the 1990s, but it built strong sourcing and price value capability through supply chain integration and is currently investing in reducing cost through automation.

Competitive Price and Quality Structures of Production

When Daikin entered the European home appliance market in 1973, it did not experience a highly competitive environment. The firm installed several measures for product quality improvement and continued to apply increasingly high qualitative in-house standards for its

products. With a rapidly rising GDP per capita in Japan, compared to the European countries in the 1970s, production cost was rising rapidly. Upon engaging in the Chinese market, Daikin experienced fierce price competition and responded by mainly concentrating on the high value-added, high-quality product segment. When Ururu Sarara was developed in 1999, Daikin was also confronted with the high price of the product due to the quality materials it was using. By 2000, Daikin was feeling price competition from its South Korean and Chinese competitors, not only in the Chinese market but also in Europe and other markets. As a reaction, Daikin expanded production bases to China and Thailand, while maintaining high-quality components. The M&A of Malaysian OYL in 2006 and US Goodman in 2012, as well as the JV with Gree in 2008, were directly aimed at improving price competitiveness. Daikin has made efforts to introduce inexpensive products, but in the last decades has been feeling fierce price competition from both Asia and the US. Its well-developed quality structures do not compensate for lacking price competitiveness.

When Midea entered the European market in the 1980s, it did so mostly under the guise of established western firms. It was not directly confronted with the competitive issues other market entrants faced. Overseas, Midea would mostly supply the markets with low- to medium-end products, at a low price point throughout the 1990s. Since the mid-2000s Midea put increasing emphasis on the improvement of product quality, as certification requirements on product quality acted as entry barriers products in mature markets. Since 2015, Midea has adopted a “strict quality policy”, which highlights the elimination of low-quality suppliers from the supply chain and seeks to develop high-quality products at higher price points. According to data on GDP per capita, production costs in China in the 1980s, and 1990s were drastically lower than in the European Union, facilitating lower pricing. While China’s GDP per capita remains lower than the European Union’s to this day, the gap has narrowed since 2000. This makes production in China more expensive than before. While Midea since the 1980s had great price competitiveness, it is also trying to upgrade its product quality to cope with rising labor costs and higher consumer standards in the European market.

Innovation and R&D capabilities

Between 1970 – 1980, research at Daikin was conducted at the research department within the Japanese production plants. In 1973, an Air-conditioning Research Center (ARC) was formed at Sakai and by 1975 two laboratories had been formed within ARC: the Environmental Research Lab and a Robot Development Lab. In 1979, a separate Daikin Electronics Technology Center (DETC) was established containing various laboratories. 1980 – 1990,

Daikin transferred most research to Mechanical Technology Research Center, which also built up ties and joint research projects with private research organizations, universities, and public agencies. Between 1990 – 2000, the Mechanics, Electronics, and Chemistry Laboratory was established. In 2000, Daikin turned the ARC, the Daikin Systems Solutions Research Center and the Environmental Research Center into companies and reformed its new Research Management Department. Daikin's first R&D center outside of Japan was established at Tsinghua University in Beijing in 2003. It was joined by the China R&D Center in Shanghai in 2010. In 2009, Daikin established its first European R&D facility named the European Environment Research Center in Belgium, concerned with the development of water-heating equipment and heat pumps. In the same year, Daikin bundled R&D capabilities of Daikin, AAF and newly acquired Nippon Muki Co. into a new Global R&D Center in Japan. In 2011, Daikin invested heavily into establishing the European Development Center (EDC) based in Belgium and with satellite facilities in both the Czech Republic and Germany. By 2014, Daikin had a (planned) network of 7 R&D centers in Japan, China, Thailand, India, Australia, Belgium, and the United States. In 2015 the Technology and Innovation Center was opened in Japan and in 2016 a new US R&D center opened (Daikin Industries Ltd., 2014b, Daikin Industries Ltd., 2014a, Daikin Industries Ltd., 2018d; Tatsuki et al., 2015). Daikin established several alliances with universities, such as a “Joint Research Chair” at Osaka University since 2006 and an academic-industry cooperation project to construct Net Zero Energy Office in Germany. It concluded agreements for cooperation with Osaka University, Nara Institute of Science and Technology, and Kyoto University since 2011. Data on R&D investments is available from 1999 – 2017 and shows a rise of investments over time. Negative developments can be observed year-on-year in 2000, 2009 and 2010 and strong years of investments growth were 2008, 2014 and 2017. The ratio of R&D expenditure to revenue decreased from 5% in 1999 to 2,64% in 2017. For the number of patents published, there is a trend towards growth. In the 1970s and 1980s numbers rose from a minimum of 11 patents granted per year to a maximum of 147 patents granted in 1987. Between 1981 – 1987, Daikin was able to continuously receive more patents each year. 1994 – 1999, Daikin experienced a high phase as they were granted 277 patents annually on average. 2000 – 2017 patents increased from 130 patents in 2000 to 522 patents in 2017, with a high variance in year-on-year growth. In winning international design awards, Daikin products have only recently received international recognition with Red Dot awards in 2013 and 2014, as well as iF Design award in 2015. The data indicate that Daikin has continuously invested in its innovation and R&D capabilities through reorganizing and establishing R&D centers, creating strategic alliances with universities (since the 2000s),

raising R&D expenditure and receiving a greater number of patents overall. While there are some years of lesser patent yields and reduced investments, data indicate that Daikin has possessed strong R&D capabilities at least since the mid-1990s.

Midea relied on the more sophisticated technology of foreign firms in the 1980s, but slowly started to improve its R&D capabilities with an R&D department in 1995 and an R&D Center in 1999. In 2006, Midea invested in new R&D laboratories for home and commercial air conditioning and higher R&D related salaries (Midea Group, 2006). The firm also used its ties with Toshiba, to establish Midea & Toshiba–Carrier DC Inverter Technology Development Lab in 2008. In the same year, it completed its new Midea Research Institute in Shunde, which integrated the research institute with a product R&D center and an overseas R&D center. Besides this main center, Midea also had set up a laundry design center and R&D hubs in Asia (Japan, Singapore, and South Korea), Europe (Germany and Italy) and in the US (Midea America Research Center) by 2015. By 2018, Midea opened 20 R&D centers worldwide, adding the Emerging Technology Center in the US, Midea User Experience & Innovation Lab in Shanghai, Guangdong Provincial Internet of Things Smart Home Engineering and Technological Research Center, Japan Research Center, Germany R&D Center, as well as Midea European R&D and Innovation Center in Austria to the portfolio. R&D intensity is not clearly extractable from Midea's balance sheets prior to 2012 since R&D expenses are included either in management expenses or in intangible assets prior to that year. R&D expenditures rose sharply in 2013 and 2014, from 247,97 million USD in 2012 to 660,05 million in USD in 2014. Between 2014 – 2017 expenditure increased on average 13% per year. In 2012, Midea displayed an R&D ratio of 2,9%. In 2015 and 2016, the ratio increased to 3,8% and remained at 3,53% in 2017. The exact amounts invested in each of the R&D facilities is not determinable, but Midea invested 58,28 million USD in its Shunde Research Institute, 29,14 million USD in its Innovation Center, 10 million USD in its Kentucky R&D Center and 2,9 million USD in its R&D and Innovation Center Europe. In total, Midea claims to have spent over 3 billion USD on R&D since 2012. Regarding the number of patents published in Europe, Midea and its subsidiaries had none prior to 2006, when one patent was published in Great Britain. Between 2012 – 2017, Midea published on average 27,33 patents annually in Europe, while the 96 published patents in 2017 signify a 317% increase compared to 2016. Regarding strategic alliances with universities and other research facilities, Midea has fostered research cooperation with Xi'an Jiaotong University, Tsinghua University, and other universities since 2001. The 2008 opening of the Midea Research Institute also included production-study-research bases, which were operated jointly with Tsinghua University and the Common Embedded Software

Technology Platform of Guangdong Province. In 2012, Midea signed an agreement with 6 universities and colleges in Henan and launched Shunde Polytechnic College. Since 2015 Midea fostered ties with 30 research institutions such as Tsinghua University, MIT, UCB, Zhejiang University, Stanford, UC Berkeley, the Chinese Academy of Sciences and the Huazhong University of Science and Technology. Regarding design awards given to Midea, the firm first received international awards in 2012, in the American IDEA Design Competition. In 2013, Midea in total won 4 German IF awards, 9 American IDEA awards, 10 German Red Dot awards, ROK GD award, ROK PIN-UP award, and Japan G-Mark award. In 2014, it won iF product design award for its Laundry Division's Beverly Series and 4 Midea Water Heater Prototypes, 2 awards at IDEA and a Red Dot Award for its AC hidden wind design concept. In 2016, Midea took home 13 iF Design Award and 5 Red Dot Awards for AC products. Midea's products were awarded 17 iF Design awards, 16 Red Dot awards, 26 IDEA awards, 5 Japanese GMARK awards and 4 GD awards in Korea in 2017. The available data suggest that Midea first began investing in its innovation and R&D capabilities in the mid to late-2000s, investing in its own research facilities and university cooperation. Around 2012, capabilities were increased with a higher ratio of R&D expenditure, growing investment into new R&D centers around the world, a rising number of patents and a sharply increasing number of international design awards each year.

Dynamic Capabilities

In the early 1970s, Daikin used a classic Japanese employment system, where university graduates would enter the firm straight after graduation and stay in the company until retirement. During the oil crisis, corporate structure was reformed to develop employee capabilities, as well as selecting and training managers in-house based on work performance. Decision-making structures were strongly concentrated on the president and a small number of directors, who devised the corporate strategy and development goals. Founder Akira Yamada and his son Minoru Yamada both held top positions in the company over a long period of time. Other leading managers also typically worked for Daikin for a long time. At the end of the 1980s, the firm crafted new management principles to make the organization more flexible (Tatsuki et al., 2015). The "Fusion 21" strategy emphasized "strong management leadership and speedy decision-making and to manage a flat and flexible internal organization" (Tatsuki et al., 2015, p. 172). Decision-making power remained in Japan and new overseas plants would initially be started-up by Japanese employees, who would then turn operations over to locals. In 2000, Daikin revised its corporate structure to enhance its dynamic capabilities, with one of the goals being the creation of an accelerated and flat management structure. For the first time,

a system of associate directors selected from domestic and overseas presences was introduced. The only non-Japanese to serve as associate director was Frans Hoorelbeke of DENV. With the new system, Daikin hoped to raise the mobility of management and promote innovation (Daikin Industries Ltd., 2000). The Technology Statement of February 2002 further emphasized flat and matrix-type organizational structures for faster decision-making. The “fast & flat” management framework further led to an officer system, aimed at speeding up strategic decisions in each functional and regional area (Daikin Industries Ltd., 2004) and an orientation towards locally adapted practices (Daikin Industries Ltd., 2006). The necessity to create products customized for local markets became a topic, resulting in a focus on developing product base models which could be quickly adapted to stricter environmental regulations and other local conditions (Tatsuki et al., 2015). The mission of the Applied Development Center is to fuse McQuay’s applied air-conditioning technologies with the Daikin Group’s technological strengths. Daikin particularly seeks the fusion of heat pumps, inverters, and systems engineering, to enable the speedy development of global base models. Then, the base models are to be quickly customized in each region of the world to suit local conditions. This enables placing high-performance, highly dependable new products on regional markets within a short period of time (Daikin Industries Ltd., 2010). With the opening of the European Development Center, Daikin invested strongly into a local R&D facility. Design divisions of Belgian, Czech, German and Turkish group companies were unified in the EDC. EDC and Rotex earned a high degree of autonomy over product development for the European market. The 2010 “Fusion 15” strategy had specifically highlighted the “localization of strategic functions such as marketing, financial strategy, and product development to enable each Group company to rapidly implement strategy flexibly and independently” (Daikin Industries Ltd., 2013). Since the mid-2000s Daikin shifted its unipolar R&D system from Japan into its overseas bases, granting them increasingly more decision-making power. Daikin announced aggressive internationalization of its management team, with 51% of presidents being overseas employees as of 2016. In Europe, 65% of sales company presidents were locals (Daikin Industries Ltd., 2016). In 2017, 52% of overseas presidents were overseas employees and in Europe, 75% of sales companies had a local employee as their president (Daikin Industries Ltd., 2017a). While Daikin is a firm of traditional decision-power centralization, dynamic capabilities and localization are a target of recent firm strategy. Especially in Europe, dynamic capabilities have been improved through localized R&D and decision-making resources since the 2000s.

Midea’s organizational structure is hierarchical because founder He Xiangjian was the controlling shareholder of the company and acted as a Group Chairman until 2012. From then

on, he controlled the organization with slowly decreasing stock shares. In 2012, six top managers also held company shares with new director Fang Hongbo becoming the third largest shareholder with 2.13%. This data seems to indicate that Midea is an organization that is heavily controlled by its top managers, holding strong decision-making power. Concerning decision-making localization, Midea aimed to orientate towards talent localization and local R&D centers. Research for its overseas products was handled at its Overseas Product R&D Centre and the Global Innovation Center in Shunde, China. Starting in 2015, Midea set up European R&D hubs in Germany and Italy, as well as the European R&D and Innovation Center for 2,9 million USD in 2017. Midea claims to have set up a globalized operational management system and a governance framework of centralized and decentralized systems. Internationalization strategy since 2016 focuses on the globalization of Chinese headquarters and the localization of subsidiaries. This suggests that R&D systems, management, and decision-making power are becoming more decentralized since 2015. Midea most recently has invested in localized R&D facilities, but dynamic capabilities are still lacking due to high decision-making centralization.

Technological capability

Much of Daikin's technological capability before 1970 was based on reverse engineered products the firm had acquired from US firms. Daikin further fostered technological ties with Worthington Corporation of the US and Fred Clark Ltd. of Australia, resulting in technological developments. In 1971, technical ties with Frigo Scandia Contracting of Sweden and Bolsig Co. of West Germany helped develop Daikin's freezing product pallet. Technical ties with Bauer-Danfoss Inc., Dow Building Solutions Co., and Air Products & Chemicals, Inc. of the US, technology transfer from K.L. AG of Switzerland, as well as the commercial use freezers produced on an OEM basis for Whirlpool Corporation improved Daikin's technical range. In 1997, Daikin entered a cross-licensing agreement with DuPont of the US, developing new and less environmentally damaging refrigerants. By the late 1990s, Daikin had gained a reputation for its strong technological capabilities. In 1999, Daikin established a strategic alliance with Matsushita Electric Industries Co., Ltd., a major Japanese competitor in the air-conditioning business, to jointly develop room air-conditioner technology. While Daikin was very strong in the production of high-end air-conditioning equipment, a 2008 agreement with Gree Electrical Appliances Co. Ltd. was supposed to provide the technological skills to produce home-use air conditioners more inexpensively (Tatsuki et al., 2015). The 2006 acquisition of OYL, including McQuay, AAF and J&E Hall, boosted Daikin's technological capabilities. All firms not only possessed specific technological capabilities, for instance in filter production but also possessed patents. The acquisitions of German company Rotex in 2016 by Daikin Europe N.V. helped

strengthen technological capabilities in the heating business (Daikin Industries Ltd., 2016). Concerning variance in R&D expenditure, data is available between 1999-2017 (2001 missing). R&D investments increased over the observed period, but year-on-year growth variance was low at 1%. Daikin kept relatively stable levels of R&D investment growth. While technological capabilities in the early days were based on OEM and agreements with developed market firms, Daikin over time added JVs with emerging market firms and the acquisition of technologically well-developed firms to its portfolio of technological capability development. Since the 1990s, Daikin enjoyed the reputation of strong technological capabilities and constantly developed its technological capabilities for new products, while maintaining stable internal conditions of technological development.

Midea's technological capability has been composed according to a clear pattern since the 1980s. Throughout the 1980s, and 1990s, Midea used OEM, joint ventures, licensing and strategic alliances with foreign firms to acquire advanced technological capabilities. Technological capabilities, necessary to enter new product segments, were often acquired through M&As, first within national boundaries and later overseas. Japanese companies like Toshiba, US companies like Texas instruments and European companies like Indesit or Merloni supplied Midea with advanced technology throughout the 1980s, and 1990s, often demanding costly licensing fees. The acquisitions of Toshiba Macro for its compressor technology in 1997 and of Sanyo Electric Co. Magnetron for its microwave oven technology in 2001 marked technological upgrade. Throughout the 2000s, the strategic alliances and JVs with Toshiba-Carrier were an important source of technological upgrading for Midea. At the same time, the company also entered the refrigerator, vacuum cleaning and washing machine businesses through domestic M&As. Since 2010, Midea engaged in new product strategies, which included building up the smart appliance and robotics segments. Since Midea had little experience in these sectors it engaged in strategic alliances with Chinese telecommunication and online firms like Huawei, Alibaba, and Xiaomi for the necessary technology. Midea further entered the robotics segment through a joint venture with Yaskawa Electric in 2015 and acquired patent-intensive German KUKA AG and Israeli Servotronics in 2017. The 2016 acquisition of Toshiba's home appliance business granted Midea the access to 5000 intellectual property assets and a 40-year right to the Toshiba brand. Although the data on R&D investment growth variance is only inclusive for 2012 – 2017, it reveals a variance of 8% due to greater disparities between investment growth. Midea's technological capabilities developed from a dependency on foreign technology throughout the 1980s, and 1990s to an upgrade through joint ventures, strategic alliances, and M&As. Throughout the 2000s, Midea entered a wider range of product

segments through the acquisition of the necessary technology. In the 2010s, Midea improved its technological capabilities through technology-intensive firm acquisitions and strategic alliances in the robotics and smart appliance sector.

Management Capability

Daikin's management capability, measured by the number of managers with international experience, is unclear with the available data. The only facts that can be stated about the number of managers with international experience are, that Daikin's entry into the European market was made possible by locally experienced businessman J. Higgs, whose business was merged into the Belgian WOS in 1972. At the other end of the observation period, European subsidiaries seem to have had a higher number of local employees in managing positions compared to other Daikin overseas subsidiaries, with the percentage of local employees as presidents rising between 2016 and 2017. Looking at the board of directors and executive officers, the number of directors and executive officers who have had experience managing in overseas subsidiaries and affiliates has slightly increased between 2010 and 2017, with about a third of their members having overseas experience.

Data on Midea's management capability, measured by the number of managers with international experience, is equally difficult to identify. Based on the provided curricula of the board members since 2002, the number of members with international experience has remained low with 14 – 18% of members having overseas experience. The fact that Midea relied upon and still carries out a lot of its business in Europe through OEM further underlines the fact that its management capability of overseas operation is relatively underdeveloped.

Marketing Capability

Brand value in USD is available since 2009 for Daikin. Value decreased from 1,07 billion USD to 968 million USD in 2013 but again grew on average by 9% between 2014 – 2017. In 2017, brand value grew by 18% to 1,34 billion USD. Data is unavailable prior to 2009 and brand value is very difficult to calculate, but that Daikin was one of the top 25 most valuable Japanese brands in the last decade. Since 2005, Daikin also acquired a number of valuable brands, especially during the high market value companies M&As of Goodman Global Group in 2012 and of the European refrigerant business of Solvay S.A. in 2015 (Daikin Industries Ltd., 2012, Daikin Industries Ltd., 2015). As for investment in overseas market and sales facilities, Daikin would typically start out sales and service through local agents and contract local service providers in Europe throughout the 1970s and 1980s. Service and sales facilities were highly developed in Japan by the early 1990s, but Daikin only started to establish its sales own

subsidiaries outside of Belgium at that time. The sales network grew continuously, partly through acquiring firms with large numbers of marketing and sales staff, in the 1990s. Specific past-purchase service facilities have not been established in Europe to this day, leaving service activities to contractors. In other markets such as China and the US, Daikin has been working on establishing greater service availability. While the selling, general and administrative expenses minus R&D expenses are not a perfect measure, as they are calculated for the entire group and may contain other expenses besides advertising, they still are the best available indicator for marketing and advertising expenses. SG&A expenses without R&D have increased since 1999, with 2008 and 2014 being the years of biggest growth by nearly 40% on average. SG&A (without R&D) as the percentage of revenue has remained relatively stable, moving around 4,56% with a variance of 0,03%. Data on marketing capability is limited for the 1970s, 1980s, and 1990s. Daikin developed its marketing capabilities since the 2000s but has apparently not invested into improving its marketing capabilities remarkably.

Midea's brand value is available for the years 1997, 2001 – 2002 and 2006 – 2017. The firm's value rose from 39,81 million USD in 1997 to 175,5 million USD in 2002. Between 2002 – 2006, the brand value rose by 167% to 467,8 million USD. Brand value continued to rise over the following years, on average by 10% during 2006 – 2014. In 2015 and 2016 brand value rose by 54% and 58%. In 2017 Midea's brand was valued at 2,79 billion USD. In terms of the acquisition of valuable brands, Midea between 1998 – 2008 mostly acquired technology for the domestic market from international and domestic brands. In 2015, Midea started to invest in M&As of valuable international brands, which had a good standing in the European market. The acquisitions of Clivet, Toshiba and KUKA AG allowed Midea to produce and market products under established brand names in the European market. On the marketing and sales side, Midea had established several subsidiaries in Europe to handle marketing, but evidence suggests that Midea does not operate its own past-purchase service facilities in Europe. Instead, it relies on local sales and service agents, like Frigicoll in Spain, for service. The data on advertising spending is similarly difficult to interpret. Throughout its balance sheets, Midea has handled advertising expense non-uniformly, counting advertising fees under sales expense in some years and under administrative expense in others. A conclusive interpretation is impossible under these conditions. Midea still has managed to significantly increase its brand value since the late 1990s. In the last decade, it acquired several valuable brands, which already operate and distribute in the European market. Simultaneously it established its own sales and service WOS in Europe but seems to be lacking in after-sales service. In sum, Midea only recently is investing in better marketing capability for the overseas markets.

Financial Strength

Daikin's firm size, measured by the number of employees, grew by 786,64% between 1974 – 2017. While the number of employees dwindled in the late 1970s and 1980s, employee numbers increased by over 120% between 1991 – 2000. Company size by employees again nearly tripled between 2000 – 2017. Firm revenue increased from 56,62 million USD in 1974 to 18,4 billion USD in 2017. 1974 – 1979, revenues rose by 103% and 1979 – 1992 they rose by 220%. With revenues rising by 25% during the 1990s, Daikin also averaged its revenues at over 10 billion USD between 2000 – 2017. Total assets of Daikin continuously increased from over 900.000 USD in 1974 to 21,25 billion USD in 2017. Looking at the firm debt ratio, calculated as total debt divided by total assets, Daikin decreased its debt ratio from 65% in 1999 to 26% in 2017. Daikin has continuously grown into a large and financially strong firm, reaching higher revenues and total assets, as well as decreasing its debt ratio by 39% since 1999.

Midea's firm size, measured by the number of employees, grew by 7325% between 1982 and 2017. During the 2000s, the firm grew rapidly in employee numbers by as much as 104% in 2004 and by 65% in 2010. In the 2010s, Midea's employee numbers grew slower than before at an annual average of 7%. Firm revenues increased from 14,58 million USD in 1990 to 36,28 billion USD in 2017. Total assets of the firm increased from 668.000 USD in 1999 to 37,21 billion USD in 2017. Midea's debt ratio in the meantime ranged from 61% in 2000 to 67% in 2017 with an average debt ratio of 59%. The ratio was skewed downwards by lower ratios in 2001, 2006, 2001 and 2015. Midea has grown into a large firm with high revenues, large assets and a great number of employees. Midea seems to be financially strong, but its debt ratio suggests that Midea financial leverage is impaired.

Learning Capability

Learning capability expressed as mention of learning in strategic intent of Daikin was not existent in the company data collected, except for a mention in "Fusion 15" strategy plan for reinforcing profitability through learning from Goodman's supply chain management processes (Daikin Industries Ltd., 2014a). There was no mention of a control system for learning processes in the company. R&D guidelines in the collected data are expressed as "R&D themes", first mentioned in 1977. Under the reorganization of the company under the "fast 8 policy of flat management" in 1994, speeding up R&D is mentioned as one of the key tasks (Tatsuki et al., 2015). "Fusion 21" plan of 1995 also called for the development of R&D. "Fusion 05" of 2000 further called to review R&D, among other aspects, from customer-first perspective. Daikin developed 19 technology themes, which were to be accomplished partly

through R&D. The 2002 technology statement of Daikin clarified that new R&D themes were to be developed and old ones were to be eliminated 3-5 years in advance. In 2009, management called for more sharply focused R&D themes, as the firm needed to reduce fixed costs. Between 2014 – 2017 Daikin established the R&D themes of “strengthen the global R&D organization” (Daikin Industries Ltd., 2017a) and of “R&D and Intellectual Property Respect for Intellectual Property Rights” (Daikin Industries Ltd., 2017b). Regarding investment in firm training and education, Daikin has established a number of measures. In the 1970s, in-house education and management training were mostly focused on employees, who had entered the firm directly after graduating from university. During the 1980s, “total preventive management” was a company policy that emphasized skill development, as well as education. In Europe, training was mostly focused on seminars and training courses for installation and service contractors. In 1993, the Daikin Training Centre was established in Europe to offer a base for training seminars. The Daikin Institute of Air Conditioning Engineering and Air Conditioning Business School were established in 1995 to train domestic system engineers and sales staff. In 1999, Daikin launched its “Overseas Practical Training Program”, which sent young employees to overseas bases for one year. During the next five years, Daikin developed its in-house training and education systems, with special courses for new staff and technicians for domestic and overseas bases. In 2004, the new Daikin Managerial Training Center focused more specifically on the training of 20 next-generation managers per year for 6 months. In 2008, Daikin established “Ales Aoya Global Training Center” in Japan with the aim of creating a facility for training personnel. Since 2012, Daikin has also added training courses directed at career building for female employees. As much of production had shifted to overseas bases, the firm established 6-month on-the-job training programs for overseas engineers and service staff in Japan and China. These on-the-job training measures had also become necessary as standards in overseas production, e.g. in the OYL plants in Malaysia, were underdeveloped. Under the “Takumi” system Daikin established a method of creating training engineers to reproduce skills as trainers at their home bases. In 2014, Daikin improved learning opportunity for its managers by creating the “Management Dojo” training program and supported communication-related education, language learning, and independent learning. The “Global Daikin Leadership Development Program” was established in 2016 to train management in overseas bases. Another recent educational theme was the focus on compliance training. Learning is not explicitly mentioned in strategic intent, control systems for learning do not seem to be described in the company data and R&D themes are not detailed in mission statements of Daikin. The company nevertheless has invested in providing in-house education and training to its

employees. With the establishment of several programs and facilities for service, as well as technical and managerial learning, Daikin has improved its learning capability since the 1990s but has only very recently attended to managerial training at its overseas bases.

Learning capability, articulated as mention of learning in strategic intent, is first expressed in the 2012 Guangdong Midea Holding annual report as the intent to learn from well-known multinational firms (Midea Group, 2012c). In 2015 and 2016, Midea vouched to “learn everything with a humble heart” in its strategic messages (Midea Group, 2015a, Midea Group, 2016a). In 2005 and 2006, statements on the intent to invest in the necessary technology and human resources to improve R&D capability reflect firm guidelines for upgrading internal R&D (Midea Group, 2005, Midea Group, 2006). In 2015, Midea promoted its guideline of “leading products”. The guideline highlights an increase in R&D investments, as well as building up a greater R&D talent pool and a global R&D system (Midea Group, 2015a). Themes of Midea’s R&D guidelines since the mid-2000s were investment, human resources, and globalization. Investments in staff training and education become apparent in biannual “Global Technical Training Session” for engineers since the late 1990s (Midea Group, 2012a). The “Elite Club” seminar program, directed at developers, designers, contractors, and consultants, started in 2010 (Midea Group, 2015c). The program is supplemented by “Elite Camp” seminar program since 2012, which supplies sales and marketing training to domestic and overseas sales executives, engineers, managers, project managers, and clients. Since 2012, Midea also includes a detailed quantified staff training plan in its annual reports, which counts the number of internal trainings, training personnel of different occupations and training work conducted for reaching goals. The numbers in the staff training plan reveal an increase from 7.252 internal trainings in 2012 to 481.708 trainings in 2016. The numbers of trained personnel in the executive, technical & marketing, and operational segments increased significantly from 2012 – 2015 but decreased by 65% in 2016. Main training work for managers included the “Linghang Series leadership development program” and the “Pilot Leadership Development Program and the High-Potential Leaders Training system”. In 2013 Midea introduced an occupational E-learning platform and in 2015 the Midea Learning App Meike. E-learning allows the firm to track logins and hours spent on the platforms. Midea also counted the number of internal trainers, teaching hours and number of developed courses, etc. management-level courses centered around “leadership skills, business models-related innovation, robots, and future technology, and marketing model reform for top management”. Numbers rose in every category until 2015 and declined in 2016. Since Midea has set clear standards for quantifying its staff training plans, this could be regarded as a control system for learning processes, although the quality of the learning process

is not evaluated in the plans. Evidence suggests that R&D guidelines were included in Midea's strategic intent since 2005 and that learning has become part of Midea's mission since 2012. While Midea set up training programs in the late 1990s, staff and client training accelerated since 2010. Quantified staff training plans since 2012 indicate a stronger emphasis on learning capability, with cutbacks on training investment since 2016.

5.3.5 International Operation Experience

When Daikin decided to enter its first overseas market, Europe, it had established ties with an European salesman, experienced in the market. At the time, export sales ratios were low at 4 – 7%. Daikin later formed a joint venture with the company set up by the European agent and finally merged the company into its first European subsidiary. It relied on the international experience of the locals in its European sales network. By 1999, Daikin was making 25,6% of its net revenues overseas, had set up 4 subsidiaries and accumulated over 30 years of experience in the European market. As Daikin was consistently acquiring its previous local distributors, it was also gaining access to the operational experience of local firms. Overseas sales ratio jumped from 24,6% in 2000 to 74,6% in 2017. Daikin also neared 50 years of overseas experience in the European market by 2017. Board members with international experience most likely increased from around 3 in 2000 to around 11 in 2017. Europe being its first overseas market, Daikin started out with little international operation experience, relying on the expertise of its local distributors. The firm increased its overseas sales ratio by 18,6% between 1974 and 1999 and by 50% between 2000 and 2017. During the period of observation, Daikin accumulated 25 subsidiaries (many through the acquisition of previous distributors) and over 40 years of WOS experience in the European market.

Between 1980 – 1999, Midea possessed no experience in the European market, besides its ties with foreign sales and marketing agents. Although as much as 70% of its fan production was exported (Cortesi, 2011), most of Midea's international experience at this point was limited to OEM exporting, strategic alliances or JVs with foreign firms inside of China. In the 2000s, Daikin began collecting international market experience with the establishment of European subsidiaries and increased the export ratio from 0,92% in 2001 to 27,6% in 2010. When Daikin neared 20 years of operation in Europe and had an export ratio of over 43%. In 2016, it also increased its number of M&As and WOS in the European market. Although data is scarce, company records seem to indicate that the number of board members with international experience since 2002 has most likely not been more than 3. In an interview with the company newsletter an employee of the international division sales department for North America

remarks that “For a company with such a broad, global scope in business like Midea does, I feel that the people in the headquarters don’t get enough exposure to the world outside of China which we regularly do business with” (Midea Group, 2012b, p. 18). Midea might use the international expertise of some of its recent M&As in Europe and subsidiaries in the future. It reached an export ratio nearing 50% and nearly 20 years of WOS experience in the EU by 2017.

5.3.6 Entry Mode Choice

Daikin first entered the western market when an English businessman convinced it to enter Malta as a base for exporting into western Europe and North Africa. The Englishman set up Daikin Air-conditioning, which soon became a joint venture with Daikin. The firm imported water chilling units, air-conditioners and other products for sale in western Europe since 1970. It further established a sales network through agents in France, Germany, Belgium, UK, Italy, the Netherlands, and other countries. Although Daikin entered strategic alliances with European firms in 1971 and 1973, they are not directly connected to market expansion in Europe. In 1972, Daikin Air-conditioning and Daikin jointly establish the subsidiary Daikin Europe N.V. (DENV) in Belgium. DENV constructed a fully-equipped administrative, production and warehousing space for small packaged air conditioners. In 1982, Daikin Air Conditioning Belgium NV was established as a sales division. Between 1990 – 1992, Daikin shifted the production of wall-mounted type indoor units and medium- and small-size indoor air-conditioning units from Japan to Belgium and expanded the premises and production facilities. In 1992, Daikin established Daikin Chemical Europe in Germany as a WOS. It acquired its French distributor Megatherm, made it a WOS and renamed it Daikin Airconditioning France S.A.S. (Tatsuki et al., 2015). In 1993, Daikin set up a United Kingdom office and warehouse as a WOS. In 1998, Daikin established two WOS specialized in chemical sales and production, Daikin Airconditioning Germany and Daikin Chemical Netherlands. It further bought Kuba Kältetechnik GmbH’s sales division to turn it into the WOS Daikin Germany GmbH. The next year, Daikin bought a local Austrian company. This Austrian Airconditioning Central Europe GmbH was established as a sales company responsible for sales in 15 central-eastern and south-eastern European countries. In 2000, Daikin established Daikin Airconditioning Spain S.L. in Madrid after buying its previous Spanish distributor ACISA (Daikin Industries Ltd., 2000). In 2001 and 2002, Daikin acquired its Italian distributor and converted it into the WOS Daikin Airconditioning Italy, as well as establishing three WOS called Daikin Airconditioning Poland, Daikin Chemical France, and Daikin Airconditioning UK. In Lyon, where DCF was located, Daikin had established business relationships with oil group Arkema (former Atofina) since the late 1990s and would later enter a joint venture with Arkema in 2006 for the Chinese market.

In the air-conditioner segment, DENV, besides its own production, was importing equipment from Daikin Industries (Thailand) Ltd. (DIT) and from Matsushita Malaysia, as Daikin had entered a strategic alliance with Matsushita Electric Industrial Co., Ltd. In 1999. In 2003, Daikin realized that it could not meet rising market demands in Europe by shipping from Thailand and Malaysia quickly enough. Daikin invested 11 million USD into Daikin Industries Czech Republic, a production facility in the Pilsen area. Production of commercial-use duct - type and cassette-type indoor units were shifted from Belgium to Pilsen and production of medium and large-size room air conditioners, multi-room air conditioners (“VRV”) and other products were shifted from Thailand to Europe. The same year, Daikin also acquired two of its UK dealers, Cooling Services and Pillinger Air. A year later it acquired one more UK distributor, MacQueen Air Conditioning Daikin Airconditioning UK Ltd., with the plan to integrate its UK business (Daikin Industries Ltd., 2018b). It further acquired its Portugal distributor, establishing the WOS Daikin Airconditioning Portugal Distribuição Equipamento Termico SA. 2006 was a year marked by M&As, as Daikin acquired OYL Industries, the parent company of McQuay International, AAF International, and J&E Hall, for 2,1 billion USD. In Europe, McQuay had production plants in Italy and the UK. AAF had WOS in France, Slovakia, Netherlands, Spain, and the UK. J&E Hall was present in the UK. In addition, Daikin established Daikin Air Conditioning Greece SA, Daikin Europe Irish Office, and Daikin Device Czech Republic as WOS. McQuay sales companies in Spain, France, and Italy were merged with the local Daikin sales companies in 2007 and DENV acquired Itho AirConditioning B.V., its air conditioning distributor in the Netherlands. It then turned it into Daikin Airconditioning Netherlands B.V. DENV acquired its distributor Svenska Daikin A.B. in Sweden, which became the WOS Daikin Sweden AB in 2008. The firm also restructured McQuay Italia into Daikin Applied Europe and acquired McQuay Szanyo and Szanyo Service in Hungary. In 2008, DENV acquired Rotex Group Companies in Germany, which widened their product range in the heat pump market. In 2009 DENV acquired Kälteanlagen Import GmbH. Daikin Belgium acquired the applied and service business of ACT, consequently set up as the Daikin Europe Hamburg Marine Office. In 2010, DENV acquired McQuay Hellas (Daikin Industries Ltd., 2018b). Between 2011 – 2017, Daikin continued restructuring McQuay Europe into Daikin Applied Europe S.p.A. but added no new subsidiaries. In 2015, Daikin Industries acquired the refrigeration business of Belgian Solvay S.A. for 26, 92 million USD. In 2016, it acquired Italian Zanotti S.p.A. for 113,41 million USD to expand its commercial freezer and refrigerator business. It also acquired Swedish filter firm Dinair AB through its AAF-Lufttechnik GmbH

subsidiary. The last recorded acquisition was Italian fluoropolymer firm Heroflon S.p.A. This raises the number of M&As in Europe since 1970 to 21.

The data on Daikin's entry mode choice reveals a distinct pattern for the European market. At the beginning of 1970, Daikin cooperated with a European agent in Malta, who would import Daikin air-conditioning products and distribute them to sales firms in western Europe. This agent then entered a joint venture with Daikin. Daikin very quickly decided to set up a large distribution, sales and production site in Belgium. Between 1971-1993 Daikin would handle its European business through its Belgian subsidiaries and distribute its products through a network of external sales companies. Between 1993 – 1997, Daikin shifted production from Japan to Europe and set up Daikin Chemical Europe as a sales agent for chemical products. It also began its strategy of systematically acquiring its European distributors and sales agents and turning them into subsidiaries, starting with Megatherm in 1993. 1993 - 1999, Daikin additionally set up subsidiaries in Belgium, France, and the UK, followed by the Netherlands, Germany, and Austria. Daikin also fortified its subsidiary Daikin Airconditioning UK by acquiring three former sales agents in the UK. Between 2000-2005, Daikin entered Spain, Poland, Italy, the Czech Republic, and Portugal. By 2017, Daikin established offices or subsidiaries in Sweden, Greece, and Ireland. Already by 2005 Daikin had established 16 subsidiaries, of which 9 were former distributors or sales agents. To relieve the shortage in supply and to speed up delivery time, Daikin established two production facilities in the Czech Republic and partly shifted production from the costlier Belgium production sites to the new plants. 2005-2010 Daikin makes 9 new acquisitions in Europe, some of which are the byproduct of the OYL industries acquisition. Daikin during this time establishes 9 subsidiaries in Europe. Major acquisitions aimed at diversifying a technically advanced product portfolio and increasing production capacity have characterized entry modes since 2008 when Daikin acquired German Rotex group. The acquisitions of Solvay S.A., Zanotti S.p.A. and Dinair AB all are examples of product portfolio extension. The OYL and Dinair acquisition have enabled Daikin to enter the filter business, the Rotex acquisition opened the heater business and Heroflon lead the way into integrated fluorochemicals production.

Throughout the 1980s, Midea was mostly focused on the growth of its domestic business (China Galaxy International Securities, 2018) and started OEM business by importing air conditioner components from Japan and Hong Kong. It then supplied the assembled OEM products to Hong Kong Shell Electronics Company for the US, Asia and European markets (Cortesi, 2011). By 1991, Midea was exporting its air conditioning products to 36 countries (Liu & Yang, 2013). Since it the firm lacked core technology, it pursued JVs with Japanese firms such as Toshiba,

Sanyo, and Panasonic, as well as with Italian Merloni Progretti and American Texas Instruments during the 1990s (Ching & Shi, 2016; Cortesi, 2011). In 1998, 60% equity interest of Toshiba's compressor joint venture with Macro was sold to Midea. Midea renamed the venture Guangdong Meizhi Compressor Corporation. It also acquired air conditioning technology from Toshiba (Ching & Shi, 2016; Liu & Yang, 2013). Midea established two JVs with Italian firm Indesit located in China (Midea Group, 2009). Activity in Europe at the time was strictly limited to OEM and export through local distributors (Midea Group, 2014). During the 2000s Midea continued its OEM-based export business in Europe for most of its sales in the region, as for the products produced in a joint venture formed with Toshiba-Carrier in 2008 (Carrier Corporation, 2008; Midea Group, 2006). A 45% owned joint venture for the production of microwaves with Belarusian company Horizont first brought Midea's production closer to the European market in 2007 (Midea Group, 2018a). Midea set up five new WOS in Europe between 2000 – 2009: Midea Europe GmbH in Germany in 2000, Midea Air-Conditioning (France) Co., Ltd., Midea Italia S.r.l, Midea Air-Conditioning (Spain) Co., Ltd. in 2008, as well as Midea Electric Appliance (Holland) Co., Ltd. in 2010 (Burghart & Rossi, 2009; Midea Group, 2008; Wolf, 2001). Between 2010 – 2017, Midea established JVs with the European firms Bosch Thermotechnik GmbH and Electrolux's brand AEG, both located in China and focused on the Chinese market (Midea Group, 2015b, Midea Group, 2017a). Midea continued to supply the mature European market mostly through its OEM channels with Siemens, Candy, Bosch, Samsung, Lidl, Carrefour, etc. (Cortesi, 2011; Midea Group, 2016b). It also directly exported parts via Midea Electric Trading Co. PTE Ltd., Singapore to local European distributors (Midea Europe GmbH, 2016; Midea Group, 2016c, Midea Group, 2017b). In 2017, Midea made 30% of its overseas sale under its own brand name (DBS Vickers, 2017). The firm made several acquisitions in Europe starting in 2015 when it acquired 5 % of German KUKA AG's stock, which it raised to over 10% in 2016. In 2016, Midea not only acquired 80,1% equity of Toshiba Lifestyle Products & Services Corporation for 485,356 million USD but also acquired 80% equity holding in Italian chiller manufacturer Clivet S.P.A and Clivet España S.A.U for 145 mil USD. In 2017, Midea acquired further 81.04% of KUKA AG's shares, reaching equity ownership of 94,55% for 3,968 billion USD (Midea Group, 2016a; Schuman, 2017). Regarding WOS, Midea set up Midea Electrics Netherlands B.V. in 2016 and converted Clivet and its subsidiaries in the UK, Spain, Germany, United Arab Emirates, Russia, and India into WOS after the acquisition. Midea also established Midea Heating & Ventilation (Italy) in 2016. In 2017 Midea deregistered its France WOS, but established FG Europe in the UK and

Midea Austria GmbH, in addition to making KUKA AG a subsidiary. Together with the firms merged after acquisition, this raises the number of subsidiaries in Europe to 8.

In summary, Midea Group entered the European market primarily through export of OEM products throughout the 1980s, and 1990s. While OEM and export via contracted sales agents remained the predominant market entry mode choice throughout the late 1990s, and the 2000s, Midea established its first European subsidiaries in Germany, France, Italy, and Spain starting in 2000. These subsidiaries were all set up as sales and marketing facilities for imports from China. Between 2010 – 2017 Midea for the first time made some key acquisitions of European firms, acquiring production facilities, obtaining access to new product technology and establishing a wider and more diverse network of sales and marketing subsidiaries in the European market. It also set up new WOS or turned acquisitions into WOS in the 2010s.

5.3.7 Entry Mode Characteristics

Apart from a brief time in the early 1970s, when Daikin first used a sales agent for exporting and later invested into a joint venture with this agent, Daikin moved quickly from low hierarchy contractual exporting, onto contractual JV, to hierarchical modes of entry, such as M&As and WOS. The relationship between parent firm and subsidiaries since then was characterized as fully owned, as previous distributors were acquired to become subsidiaries and new WOS were set up to support sales and production. Most European activities were directed from the regional headquarter of DENV, which would acquire or establish subsidiaries at geographically close locations. Parent firm Daikin industries would still have strong control over the production system, as the decisions on what and where to produce were made at Japanese headquarters and the corporate organization was characterized by a high degree of centralization. Throughout the last decade, centralization has been weakened by more localized strategies, but entry mode strategies still have remained highly hierarchical. While Daikin has chosen technologically risky entry modes in other markets, its fully hierarchical entry modes in Europe are characterized by low levels of access to technology to parties outside of the firm. Resource commitment of Daikin's entry modes should be considered as high, as hierarchical entry modes are generally considered high in resource commitment. 1998 – 2004, 2006 – 2010 and 2015 - 2017 were periods of increased M&A frequency. 1992 -1993, 1998 – 2004 and 2006 – 2007 were period of high new WOS frequency. Data on the exact investments in facilities and human resources is incomplete, but M&As and WOS, especially the establishment of new production sites was related to substantial investments in 1972, 1991, 1992 and 2003. The OYL, Solvay and Zanotti M&As in 2006, 2015 and 2016, as well as the establishment of the EDC, have been

large investments ranging from 2 billion USD for acquiring OYL to 15,1 million USD for establishing EDC. The flexibility of entry modes was characterized by quick entry modes with short initial set-up times, where sales agents distributed exports quickly in the market. Acquisitions and WOS generally were expected to start production or contribute to sales within 1-2 years, e.g. in the case of the Belgian and Czech production sites. Further, entry modes were characterized by full acquisition of stocks and high control, making them long-term sustainable and high in ownership.

Midea exclusively used external sales agents for the export of its products to the European market between 1980 – 1999. Midea entered the market with hierarchical high control modes, first using WOS and later increasingly high-equity M&As to enter the market starting in 2000. Midea's relationship between parent firm and subsidiaries in Europe is difficult to extract from available materials, but hierarchical control over its sales agents and distributors' marketing and sales strategy must have been limited before 2000 since Midea had no equity ownership in these firms. With the establishment of five new WOS between 2000 – 2010, Midea gained control over sales and marketing activities in 5 European countries, owning 100% equity and fully controlling these subsidiaries. The KUKA M&A developed incrementally, with Midea first acquiring minority equity in the firm, increasing equity in 2016 and in 2017 becoming the majority owner of 94% with full hierarchical control. With the acquisitions of 80% equity of Clivet in Italy in 2016, Midea further followed a hierarchical market entry path, which included its first production facility within the European Union.

Entry modes until 2000 were characterized by no ownership, low hierarchical control, low resource commitment, low technology risk, and high flexibility, with short initial set-up times and short-term sustainability of the operation, as sales agents in the market were contracted. With the establishment of WOS between 2000 – 2010, hierarchical control of entry modes was still compromised by a lack of a designated European headquarter. Midea at the time was a highly centralized firm, which practiced full control over its overseas subsidiaries. Resource commitment rose to an average of 137.180 USD per newly established WOS, with as little as 3.500 USD committed to the establishment of Midea Air-Conditioning (Spain) Co., Ltd. In addition to this resource commitment, the new WOS were more long-term sustainable and their ownership was at a maximum of 100%. Between 2010 – 2017, average ownership was lowered to 84% in 2015 and 2016, but rose to 96% in 2017, as the ownership of KUKA AG reached majority levels. Midea's market entry modes during this period can be characterized as high in ownership, low in flexibility, long-term oriented and high in resource commitment. The firm spent 4,6 billion USD for its M&As since 2015. With the high levels of ownership, it also

decreased the technology risk of entry modes. With the newly acquired subsidiaries, Midea practices greater hierarchical control in Europe. Most notably, Midea continues to make a large portion of its sale through OEM, without any hierarchical control and ownership, but no specific resource commitments, technology risk and with high flexibility in the market. In summary, Midea has moved straight from low control, low commitment, flexible market entry modes to high control, high commitment and long-term market entry modes since 2000. In its most recent upsurge of high resource commitment M&As in the European market, there is an event of gradually increasing equity ownership. Since Midea continues to sell as an OEM in the European market, its recent market entry modes can be characterized as double-track: high commitment and high control on one side and low commitment and low control on the other side.

6 Findings and Discussion

6.1 Similarities in International Market Entry Strategies

6.1.1 Country-Level Factors

Market Demand and Market Size of Target Market

Domestic market size differed at the time of European market entry, but both Daikin and Midea encountered a large and attractive overseas market in the EU. Given the data on European market size, this finding concurs with the idea of large markets attracting internationalization activities. Especially latecomer theories have stressed the market size as a crucial factor of influence for market entry (Mathews et al., 2011; Xie et al., 2017). Larger markets make entry through acquisitions more likely (Root, 1994). Both firms were likely attracted by the large European market, but political conditions in the home country would have not permitted market entry at the same time, as discussed in political and economic conditions. Both firms still did not enter the market through acquisition, which can most likely be regarded as the product of further moderating factors.

Another similarity, found in EU home appliance market concentration before market entry, is that both Daikin and Midea entered the European market at times when the market had become dominated by a small number of oligopolistic firms. When Japanese firms entered the European market in the 1970s, the market was concentrated among US and Italian firms. Japanese firms temporarily deconcentrated the market, but oligopolistic structures had solidified again in the 1980s and 1990s. When South Korean and Chinese firms entered the market in the 1990s and

2000s, the European market was temporarily deconcentrated, before entering a new period of consolidation during the 2010s. As predicted in Osland et al. (2001), both firms chose exporting as their initial market entry mode when entering the highly concentrated EU market.

Political and Economic Conditions

Both Daikin and Midea entered the European Union at a time, when government intervention was relatively stable, although the share of general government final consumption expenditure at the time of Daikin's market entry was lower. Overall the stability of the market was appealing to both firms at the time of their market entry.

Both Daikin and Midea dealt with restrictions in political openness in the 1970s and 1980s since the European market was characterized by protection measures for local industries, import monitoring measures, high tariffs, and other restrictions. Openness measured by exports plus imports over GDP further confirms that Daikin and Midea met similar levels of political openness during their market entries. The number of surveillance and monitoring measures rose shortly after Daikin's market entry, suggesting a connection to entry mode changes shortly after initial entry. Firms will choose entry modes that are most suitable to deal with changing political environments (Duanmu, 2012), which means that a change of political openness could have caused Daikin's change of entry mode. Political openness improved with EU market integration and other market liberalization measures. Since political openness improved in the 1990s, both firms would have had the chance to develop their strategies in a more similar fashion.

Regarding political risk, both firms faced similar levels of risk entering a relatively secure political environment. This is supported by the insights on legal regime and government policies at the time of market entry since e.g. property protection was harmonized in the European market in from the 1970s onwards. This suggests that both firms experienced favorable and increasingly better conditions in the European market at the time of their market entry. According to the discussed authors, stable conditions of political risk encourage market entry and the political risk condition in the 1970s and 1980s can be characterized as stable.

6.1.2 Industry-Level Factors

Industry Structure

Data on industry size is incomplete for both selected cases. With missing data on sales growth of the home appliance industries in Japan and China, it is impossible to determine similarities or differences in industry stability. An indication of similar developments in industry growth could be similar trends of growing domestic demand for home appliances in 1970s Japan and

2000s China. Productivity data is not sufficiently available, but one commonality between both countries' industry productivity is that large MNEs are accredited with higher rates of productivity. Since both home appliance industries were heavily shaped by large firms, this indicates that home appliance industries are among the more productive industries in each country. One striking similarity of the home appliance industry for the selected cases is the existence of large industry clusters. Both Daikin and Midea have their headquarters in industrial regions, which are home to several very large home appliance firms and well-established networks of small and medium-sized suppliers. The collected data suggest that both firms originate from large industries with developed industry clusters and productivity structures. According to the literature, these structures are supportive of internationalization activity (Deng, 2012; Li et al., 2005; Porter, 1990; Yang, Lim et al., 2009).

Industry Policies

Both the Japanese and the Chinese home appliance benefited from favorable national and local government policies and the support of ministries for trade and industry. The most prominent ministries involved in the home appliance industry were the Ministry of International Trade and Industry in Japan and the Ministry of Science and Technology, Ministry of Foreign Trade and Economic Cooperation and the Ministry of Industry and Information Technology in China. Another similarity was the strategy of both the Japanese and the Chinese government to identify technology-intensive industries for augmented support. At the time of Daikin's and Midea's market entry, both Japan and China were opening its markets for capital outflows and foreign investments. In the 1990s, both governments supported technology-seeking investments abroad. Both countries offered preferential loans to firms of key industries, seeking foreign investments in line with government policies. Both countries also eventually became members of the WTO (Japan in 1995 and China in 2001). Both governments offered subsidies and preferential tax programs for firms within the home appliance industries, as well as tax benefits or subsidies for the purchase of appliances approved by the government. A specific common focus of both the Japanese and the Chinese government home appliance industries was the issue of policies for energy conservation and the spread of energy-efficient appliances, which offered direct subsidies for the purchase of government certified appliances. Similarities are found even in the name of these programs, like "Green Investment Tax Reduction" in Japan and "Green Appliances Subsidies" program in China. These findings concur with Porter's idea of industry upgrading through government industrial policy, which targets, promotes, protects, and subsidizes key industries. Both firms likely experienced favorable domestic industry conditions for establishing competitive advantages in foreign markets (Porter, 1990).

Industrial Competition

Both firms experienced strongly concentrated conditions in their domestic home appliance industry during the 1990s, where the Chinese industry was concentrated on an even smaller number of firms compared to the Japanese industry. The trend of industry concentration continued throughout the 2000s, and 2010s. Market shares of the industry were divided between few large home appliance firms, meaning that the home appliance industries, including the air conditioner segment, became oligopolistic industries concentrating over 50% of market shares on five or fewer firms. Since strong domestic market competition drives internationalization, the oligopolistic nature of domestic markets in both countries could be connected to a shared increase in strategy aggressiveness and more similar entry mode choices since the 2000s.

6.1.3 Firm-Level Factors

Product Features

Both firms manufacture medium – to high technology products, with the common product segment of home appliances and a focus on air conditioners in their product portfolio. Another commonality of product features at the time of market entry are non-differentiated and non-adaptable products. Both firms relied on technologies developed by external sources and lacked technological and dynamic capabilities to free themselves from this dependency. Air conditioner products were an important source of revenue for both firms. Notably, Midea also stepped into the robotics and automation business in 2015, just like Daikin during the 1980s, and 1990s. The motivations behind the change in product portfolio were similar, as both firms were interested in automating their own production. While product portfolio, adaptability, and differentiation of products developed differently in the years since market entry, both firms in the 2010s emphasized creating differentiated products, which are adaptable to the needs of the European market. The findings of this thesis confirm, that Daikin moved to high control entry modes in Europe after adding more differentiated and adaptable products to its portfolio. Based on Root (1994)'s argumentation, Daikin would have been motivated to switch from low control modes to higher control modes as it introduced more differentiated and adaptable products. Since Midea's products became more differentiated and adaptable in the 2010s, this also matches the findings of increasing higher control modes in the European market on Midea's side. Since market entry strategies are influenced by product features, the product similarities at the time of market entry and the product similarities of the 2010s are likely connected to more similar market entry strategies during these periods.

Strategy

Daikin's and Midea's strategies differed considerably prior to the 2010s regarding their goals and objectives, as well as regarding their strategy aggressiveness. Looking at the development of strategy in a time-delayed manner, there still are similarities in the development of goals and objectives over time. Both firms emphasized revenue growth and technology upgrading at the beginning of their market entries. Since 2011, Daikin's goals and objectives include localization, emerging market expansion, product differentiation, and environment-related technology innovation. Its strategy in the European market remained aggressive, as M&As secured market entry into new product segments in Europe. Midea's goals and objectives also focused on localization, market expansion, and product differentiation. Further, it emphasized market share expansion, marketing networks expansion, management structure improvement, brand building, and internationalization. These goals and objectives are like the strategies Daikin developed in the 2000s. Midea's strategy aggressiveness increased, as it turned away from its OEM strategy, towards high commitment market entry modes in the European market. By employing an aggressive strategy of speedy high-commitment market entry, Midea's strategy increasingly resembled Daikin's strategy in Europe. Strategy in this case study seems to be intertwined with the development of product features, as differentiation and adaptation became more important. With changing goals and objectives, strategy aggressiveness was more alike.

Firm-Specific Capabilities

Both Daikin and Midea were integrated into business or production networks in both their domestic and global industries. They could rely on a close network of firms in the same industry in close proximity, with whom they could enter equity-based alliances. Both firms also actively engaged in equity-based alliances with European firms since the 1990s, which according to network theory should have reduced their liability of foreignness with the EU.

The analysis of dynamic capabilities revealed similarities for both cases. Both firms were hierarchical organizations with centralized decision-making structures. Firm founders held leading positions within the firm and effectively controlled strategic development until their retirement. Both firms emphasized the need to create flatter organization structures and localize decision-making structures, with Daikin starting the process earlier than Midea. As a result of localization, both firms are recently shifting decision-making to overseas R&D centers and emphasize the recruitment of local management. Both firms are in the process of improvement, but not considered strong in dynamic capability.

Both firms developed their initial technological capabilities based on technology, which they developed in the course of OEM production and licensing from foreign firms. Both later upgraded their strategy for improving technological capabilities through joint ventures, strategic alliances, and M&As. Especially M&As of technologically advanced firms have been a popular strategy to acquire the technological capabilities needed for advanced product ranges.

Data of management capability of both firms is inconclusive. However, both firms have had low numbers of internationally experience board members in the 2000s, and 2010s, which suggests that management capability related to overseas locations is relatively poor. This finding makes it unlikely, that experienced entrepreneurs have been the driving force of internationalization in neither Daikin nor Midea.

In terms of financial strength, both Midea and Daikin grew into large and financially strong firms since market entry. Both increased their number of employees, firm revenues and total assets. This means that both firms had at some point gained the financial strength to choose from a wider variety of entry modes for the European market.

International Operation Experience

Prior to and immediately after their market entry, both Daikin and Midea possessed no international operation experience. Both firms similarly relied on the expertise of local sales agents for the export of their products. Despite differences in their WOS age, board members with international experience and export ratios, both firms eventually acquired international operation experience through M&As in the European market.

Entry Mode Choice and Entry Mode Characteristics

Both Daikin and Midea first entered the European market through the contractual entry mode of exporting and moved on to hierarchical modes of entry over time. Both firms also share the fact, that they entered cooperative agreements, such as strategic alliances and joint ventures, with technologically advanced European firms directed at domestic activity in the 1970s and 1980s. While entry mode choice varied between Daikin and Midea since the initial market entries, both firms display a similar tendency to use hierarchical entry modes, especially M&As of large European firms, to enter the market with an improved product portfolio, improved sales and distribution networks. This parallel on entry mode choice has been prevalent in the 2010 years for both Midea and Daikin. Entry mode characteristics were similar during market entry in their low level of resource commitment, technology risk, high flexibility, low ownership, and low hierarchical control. Since the 2010s, there are increasing similarities in the level of

resource commitment, flexibility, high ownership, technology risk and high hierarchical control of entry modes.

Similarities	
Country-Level	- Attractive Host-Market Size - Strong Host-Market Concentration at Market Entry - Stable Government Intervention - Similar Levels of Political Openness - Attractive Host-Market Infrastructure
Industry-Level	- Similar Local Industrial Clusters - Possible Productivity Advantages of MNEs - Policy Support of National and Local Governments - Support of Government Ministries - Intense Industrial Competition in Domestic Industries Since the 1990s - Oligopolistic Industry Environments
Firm-Level	- Overall Level of Product Technology Intensity - Dependency on Foreign Technology at Market Entry - Similar Product Differentiation and Adaptability at Market Entry - Emphasis on Product Differentiation and Adaptability of Portfolio in the 2010s - Strategic Focus on Revenue Growth and Technology Upgrading at Market Entry - Emphasis on Localization, Market Expansion and Product Differentiation in the 2010s - Similar Strategy Aggressiveness and Strategy Goals in the 2010s - Integration into Business and Production Networks - Dynamic Capabilities - Development of Technological Capability from External Dependency to in-House Capability - Lack of International Management Capability - Improvement of Financial Strength Since Market Entry - Entry Mode Choice at Market Entry - Entry Mode Characteristics at Market Entry

Figure 5 Similarities of Daikin's and Midea's International Market Entry Strategies in the European Market

6.2 Differences in the International Market Entry Strategies

6.2.1 Country-Level Factors

Market Demand

At the time of Daikin's entry into Europe, the Japanese market size was large and growing at rapid rates. In comparison, the Chinese market size was growing at slower rates in the 1980s, when Midea started to enter the European market. The Japanese market size was larger than the Chinese market size throughout the entire period of observation. It started to grow at increasingly smaller rates compared to the acceleration of Chinese market growth since the

1990s. In the compared cases, domestic market size hence differed considerably at the time of European market entry. Industry-based views predict that strong and dynamic domestic markets lead to stronger firms with more developed capabilities. While Daikin entered the market at a time of strong domestic market demand, Midea developed in a much smaller domestic market. Following this logic, Daikin likely had stronger capabilities than Midea at the time of its market entry. This difference is an indicator of the availability of a wider array of entry mode choices. Another difference is revealed when comparing the time of market entry with the time of dynamic growth of the European market. While Daikin entered Europe during a time of dynamic market growth in the early 1970s, the early 1980s cannot be regarded equally dynamic. Dynamic development might have been second in motivation to general market size for the market entry decision of Midea.

Cultural Distance

Japan and China have different levels of cultural distance to the European Union. The cultural distance index between EU and Japan is lower at 1,78 than the index between EU and China with 3,55. Japan is culturally closer to the EU than China, which indicates that Japanese firms could have found the European market environment easier to enter, although firms from both countries might have used business networks to overcome the barriers of cultural distance. Lower scores of cultural distance are connected to easier market entry (Yeh, 1988). Greater cultural distance makes high commitment modes less likely, which could explain an earlier trend of high commitment modes of Daikin compared to Midea. On the other hand, both firms increased their involvement in transnational equity-based alliances since the 1990s. The networks created in the process, according to network theory, could have allowed Midea to overcome market uncertainties and engage in higher commitment entry modes in the 1990s.

Political and Economic Conditions

When Daikin entered the market of the European Union in the early 1970s, it was dealing with a stable economic situation, characterized by low inflation of consumer prices. When Midea entered the market on the other hand in the early 1980s, the firm had to deal with a less stable environment and high inflation of consumer prices. This fits in with Osland et al. (2001)'s and Duanmu (2012)'s findings that Japanese firms prefer environments with less risk and greater stability, while Chinese firms are less sensitive to the risk posed by less stable economic conditions.

Since data is missing prior to 1980, it is impossible to confirm whether Daikin and Midea experienced similar corporate tax rates upon market entry, but secondary literature seems to

indicate that Daikin might have experienced corporate tax rates around 30% in the early 1970s in Belgium (Gomes & Pouget, 2008). This compares to the average corporate tax rate of 47,79% Midea experienced in 1980. Strong government intervention deters firms from high resource commitment in foreign markets. Lower government intervention, measured as government expenditure and local Belgian tax rate in the 1970s, could have motivated Daikin to switch from its low commitment to high commitment entry modes earlier than Midea. An investigation of the corporate tax rate and location choice of East Asian firms in Europe might be an interesting topic for the future.

European target-market production factors offered different advantages to Japanese and Chinese investors based on their home-market production factors and time of market entry. At the time of Daikin's market entry, the EU possessed higher levels of knowledge and technology resources measured by the number of patent applications by residents than Japan. Japanese knowledge and technology resources after 1973 surpassed European levels. In comparison, knowledge and technology resources in the EU were more abundant compared to the Chinese market, as Chinese numbers first surpassed certain European measures in the 2000s. This suggests that both firms entered the market at a point in time when knowledge and technology resource endowments in the host-market were more developed than in their home market. Rail infrastructure was well developed in Europe at the time of both firm's market entry. The difference in availability of infrastructure are in resource endowments since the EU was better equipped than Japan but received lower rents from resources than China. Regarding electricity availability, Europe and Japan both offered high levels of availability, while China electricity consumption stayed below European and Chinese levels. In terms of skilled labor force, both Dakin and Midea entered Europe at times when tertiary enrollment rates were high and growing. Labor skill, measured as tertiary enrollment rates, in Europe was not higher than in Japan throughout the period of observation but was continuously higher than in China. The production factor of labor skill can be interpreted to be more abundantly available in Europe compared to the Chinese market. In terms of labor cost, unit production costs in Europe were becoming more expensive, meaning that Midea's market entry met less abundant resources of low labor cost than at the time of Daikin's market entry. Europe for Daikin had to offer superior technology and knowledge resources in the early 1970s, larger resource endowments, moderate labor costs, and a well-developed transport infrastructure. To Midea, Europe had to offer superior technology and knowledge resources, better-developed infrastructure and labor skill.

6.2.2 Industry-Level Factors

Industry Structure

Based on the percentage of employees in the total workforce in manufacturing, Japan's manufacturing industry was large in the 1970s and declined continuously until 2017. This trend was reversed in China, where the percentage of employees in the total workforce in manufacturing increased between 1980 – 1990. Since the home appliance industry is considered part of the manufacturing industry, the size of the home appliance industry in Japan likely shrunk during the period of observation, while the size of the Chinese home appliance industry increased. This argument is supported by the declining number of employees in the Japanese household appliance industry and the declining output of refrigerators in Japan between 2002 – 2014. At the same time, China was producing increasing numbers of air conditioners and employing higher numbers of people in the home appliance industry. Another difference is the timing of domestic market demand development in relation to market entry into Europe. While Daikin entered the market during a time of stronger domestic demand and possibly of industry growth, Midea entered Europe before the Chinese market demand for home appliances accelerated. While the Chinese market in the 2010s was still characterized by relatively stable, if not staggering growth rates, industry growth in Japan was described as sluggish. Although the data on industry stability is incomplete, there is evidence that industry stability developed differently in Japan and China during the period of observation.

Industry Policies

Japan first opened its market for outgoing investments in the 1970s. China opened its market to outgoing investments in 1979. A difference in opening policy were Chinese restrictions on firms permitted to invest abroad. While Japanese private firms were not restricted in their efforts to internationalize, foreign investments by private firms from China were only permitted from 1985 onwards. Both governments launched subsidy programs for home appliances, with the Japanese government focusing on energy-efficiency promoting measures since the 1970s. In China, the local government was more heavily involved in the growth promotion of the home appliance industry, establishing joint facilities to promote international strategies of Shunde firms. The Japanese government also issued policies directed at environmental protection, such as energy conservation and ozone-sensitive chemicals in the 1970s, which impacted the home appliance industry in the motivation to develop more environmentally friendly products. The Japanese home appliance industry was confronted with more restrictive policies compared to the Chinese home appliance industry but benefited indirectly from policy changes regarding

housing and construction. In contrast, the Chinese government implemented more direct policies for increasing home appliance demand in the domestic market, like the “Home Appliances Subsidy Policy for Rural Villages”. A further difference is the focus of Chinese “Made in China 2025” strategy to support industrial design development and the recent government support for investing in robotics and factory automatization. From these findings on industry policy, a crucial determinant of initial entry mode choice is extracted. Due to the investment restrictions on private firms until 1985, Midea could not have chosen hierarchical modes of investment for the European market in 1980. Exporting and OEM contracts were possible on the other hand. While both countries supported their home appliance industries, the earlier focus on environmental protection can be connected to the earlier development of environmentally minded products, which matched European market demand on Daikin’s side. Industry policy differences likely also influenced the inclusion of robotics in Midea’s portfolio, while Daikin built and abolished its robotics business without policy support in the 1990s.

Industrial Competition

A difference in industrial competition was the concentration at the point of market entry. While Daikin enjoyed the privilege of entering the European market at a time, when Japan’s domestic industry was only starting to develop, Midea was entering the market under the conditions of fierce domestic competition. The 1990s were a decade of increased domestic industry concentration in both Japan and China, but the HVAC industry in Japan was less concentrated due to the market entry of Chinese and South Korean firms. Daikin further profited from a global trend of industry concentration in the chemical segment, which did not directly affect Midea. Industrial competition in the 2000s and 2010s again became increasingly oligopolistic in both countries.

6.2.3 Firm-Level Factors

Firm Size

When both firms are compared in their development of firm size, Daikin was the larger company throughout the 1970s, 1980s, and 1990s. In 2002, Midea for the first time employed more people than Daikin. Despite a sharp drop in Midea’s staff in 2005, Midea continued to grow larger measured in the number of employees than Daikin in the 2000s. Although revenue is unavailable for Midea before 1990, it appears that Daikin overall had larger revenues between 1970 – 2010, despite Midea’s higher revenues in 2006. Midea surpassed Daikin in terms of revenue in 2010 and has widened the disparity with of over 17 billion USD higher revenues compared to Daikin in 2017. According to theory, large firms practice different entry strategies,

as they possess different resources and capabilities for foreign market entry (Guillén, 2002; Knickerbocker, 1973; Li, 1994; Ozawa, 1979). When the two firms are compared according to this argument, Daikin possessed better resources and capabilities in the 1970s, 1980s, 1990s, and 2000s, due to its much larger firm size. Since the 2010s Midea surpassed Daikin in both employee numbers and revenue, meaning that Midea had the same size related resources and capabilities to employ market entry strategies in the European market in the 2010s like Daikin.

Product Features

Daikin at the time of its market entry was already producing technology-intensive air conditioners, while Midea entered the European market through the export of less technology-intensive electrical fans. The first difference is found in the technology intensity of products at the time of market entry. While both firms were active in the production of HVAC equipment, Midea's product portfolio in the 1970s concentrated mostly on chemicals and HVAC equipment, while Midea was mostly concentrated on HVAC production during the 1980s. Midea then enlarged its product portfolio through cooperation with foreign firms or acquisitions of firms active in other product segments. Daikin in the 1980s, and 1990s entered several product segments through smaller acquisitions and in-house development effort but had to abandon its efforts in the robotics segment. While Midea's product portfolio grew to include a wide range of large and small home appliances, Daikin focused mostly on its HVAC and chemical business segments in the 1990s, 2000s, and 2010s. Daikin had tried to develop robotics in-house, but Midea acquired a leading robotics firm and entered a joint venture with another leading robotics firm. While the product portfolios were similar in their reliance on revenue from large appliances like air conditioners, both firms developed divergent product segments. During the 1980s Daikin was already developing highly differentiated products for its main business segments, while Midea lacked the capabilities to launch differentiated products. Throughout the 1990s, and 2000s, Daikin further developed highly differentiated products, high in adaptation ability for the environmentally minded European market. Midea in the meantime was able to sell products differentiated in the Chinese market but unable to deliver both differentiated and adaptable products to the European market. Daikin maintained its differentiation and adaptability oriented product strategy, but Midea only started to develop such a strategy in the 2010s. Midea's product differentiation improved in recent years, but adaption ability still had not reached equal levels with Daikin. Another difference between the product features of the two firms is their development timing of product differentiation, and product adaptability. Daikin established and maintained these product features soon after

European market entry, but Midea only improved them after having been active in Europe for 30 years.

Strategy

During the 1970s Daikin already developed a detailed strategy, which besides revenue growth, also focused on the development of human resources, management systems, corporate structure, cost reduction, and environmental protection. Global strategy, focused on market entry and expansion in Europe, can be characterized as aggressive in the first half of the 1970s and non-aggressive in the second half of the 1970s. At the time of Midea's market entry into Europe in the 1980s, its non-aggressive strategy of market entry through export and OEM production was motivated by the main goal of revenue growth and protecting market shares against foreign entrants into the domestic market. At the same time, Daikin released five-year plans on leadership development, sales, and service network development, technology development and development of business and production in overseas regions. In the late 1980s, its market entry strategies in Europe further became increasingly aggressive. Throughout the 1990s Daikin's goals and objectives centered around revenue growth, global market share, increasing profitability, improving systems for global business, reducing costs and the efficient relocation of staff, capital and managerial resources. Daikin's strategy in the 1990s can be characterized as an aggressive "all-out strategy", which aimed at entering foreign market speedily and with high commitment entry modes. In Europe, this was part of the strategy for improving localization through local production. Midea's goals and objectives in the 1990s revolved around domestic market share, revenue growth, product portfolio expansion and technology learning through cooperation with foreign firms. Global strategy remained non-aggressive and focused on low commitment market entry modes. In the 2000s Daikin set its sight on top global market shares, revenue growth, localization, market expansion, product portfolio expansion, sales and service network development, supply chain integration and technology development for product differentiation. The global strategy applied to Europe was characterized by speedy market entry through high commitment market entry modes, such as M&As. This was motivated by the goal of product differentiation, and localization for the European market. Midea's main goals and objectives in the 2000s included revenue growth, improving management efficiency, internationalization, and technology upgrading. Global strategy was developed to support hybrid strategies of aggressive or non-aggressive strategies based on the conditions of the overseas market. A special focus of global strategy was also placed on localization, product differentiation, and brand name building. In the late 2000s, this global strategy reflected on an increasing focus on cooperative and hierarchical entry modes.

Midea's hybrid strategy in Europe rested on the two pillars of simultaneous non-aggressive OEM and own-brand export strategy and aggressive strategy of high commitment entry modes. In summary, aggressiveness and goals and objectives in Daikin's and Midea's strategies were dissimilar until the 2010s. Midea's goals and objectives in the 1980s, and 1990s centered mostly around domestic market expansion and technology upgrading, while Daikin since the 1970s was focused on global market expansion, product differentiation, and localization. Especially the strategic focus on localized, environmentally-friendly products for the European market differed from Midea's strategies at the time. In terms of strategy aggressiveness, Daikin employed aggressive strategies in the European market since the 1970s, while Midea moved from non-aggressive strategies to hybrid strategies in the 2000s.

Firm-Specific Capabilities

Daikin's sourcing and price value capabilities have been less advantageous compared to Midea's. Daikin was unable to offer products at the same low prices as Midea since higher labor costs increased overall product prices in the 1970s. Although Daikin improved its price capabilities by automation during the 1980s, it could not compete with the prices of its Chinese competitor. In addition to low labor costs, Midea also profited from increasingly integrated supply chains in the 1980s, and 1990s. In the late 1990s, Daikin sought to improve its price value by shifting production from Japan to lower cost production sites in Southeast Asia and by shifting production from Belgium to lower-cost production sites in eastern Europe. At the same time, Midea was lowering prices annually and further integrated its supply chain. Since the 2000s, Daikin sought to improve sourcing and price value capabilities through the acquisition of low-cost production and distributing systems. It also sought to improve sourcing and price value capabilities through entering a joint venture with a major Chinese home appliance firm and to integrate its supply chains, especially in the chemicals and air filter business. Midea already possessed advantageous sourcing and price value capabilities but integrated the acquired robotics firms into the supply chain in an effort to maintain its favorable sourcing and price value capabilities despite rising labor costs.

In terms of competitive price and quality structures of production Daikin developed more extensive quality capabilities, as it concentrated on product quality improvement since the 1970s. Its high in-house quality standards allowed Daikin to establish itself in the high value-added, high-quality product segment in domestic and overseas markets. While Daikin struggled to maintain its quality production at competitive prices in the late 1990s, it maintained its high-quality component standard but relocated production to cheaper production sites. Midea, on the

other hand, built its overseas business in the low- to the medium-quality range at competitive price points in the 1980s and 1990s. Since production costs in China were drastically lower, Chinese firms here had a competitive price advantage. Since the 2000s, Midea sought to improve product quality and enter the high-quality product segment at higher price points, since production costs are obstructing former price competitive advantages.

At the time of Daikin's market entry in the 1970s, the firm had established several in-house research facilities and increased the number of published patents, which benefitted its innovation and R&D capabilities. Daikin also established ties with private research organizations, universities, and public agencies during the 1980s. Midea on the contrary fully relied on foreign technology during the 1980s, and first established in-house research facilities in 1995. It also did not publish patents in Europe prior to 2006. In the 1990s, Daikin added to its in-house facilities and university cooperations in Japan had high R&D expenditure to revenue of 5% and in the 2000s the firm started to establish R&D facilities outside of Japan. Midea at the time was building large in-house R&D centers in China. In the 2010s, Daikin invested heavily into new overseas R&D centers and established new university alliances. Since 1999, R&D investments had also risen. Daikin did not obtain a great number of international design awards but increased the number of patents between 2000 – 2017. Midea first set up overseas R&D facilities in the 2010s and increased R&D expenditures and established research ties with universities. The R&D ratio also increased to over 3%, as Midea invested in new R&D facilities. Patent numbers were still lower than Daikin's, but Midea won a wide array of international design awards in the 2010s. In terms of innovation and R&D, Daikin had better capabilities than Midea in the 1970s, 1980s, 1990s, and 2000s. Only in the 2010s, Midea started closing the gap.

Based on R&D expenditure, Daikin had a more stable pattern of investment, which indicates better technological capability. Earlier development of innovation, R&D and technological capabilities at Daikin are interpreted as the basis for advanced product development, which ultimately influenced strategy and market entry mode choice.

Daikin and Midea differ in their marketing capabilities throughout the period of observation. Data is insufficient prior to the 1990s, but Daikin improved its marketing capabilities through rising advertising expenses, rising brand values and the acquisition of valuable brands in the 2000s and 2010s. Post-purchase-service facilities in Europe remained underdeveloped. Midea increased its brand value considerably since the late 1990s, but only started to acquire valuable brands in Europe in 2015. Data on advertising expenses is difficult to interpret due to changes

in accounting standards in the balance sheets. Like Daikin, Midea relies on local contractors for post-purchase service activities. Both firms have not fully developed their marketing capabilities in Europe, but Daikin started improvement in the 2000s, while Midea only recently engaged in improvement activities.

In terms of financial strength, Daikin was financially growing stronger in revenues in the 1970s, while its number of employees varied. At the beginning of the 1980s, the firm was making over 1 billion USD in revenue. Debt ratio reveals that Daikin's leverage was restricted by a debt ratio of 65% in 1999. Daikin was able to reduce this ratio to 26% in 2017. It also reported 18,4 billion USD in revenues and a large number of employees. Midea in comparison also rapidly grew stronger financially, as employees numbers, total assets and revenues increased, but only passing the 1 billion revenue mark in 2000. The major difference between the firms is the development of their debt ratio. Besides arriving at the 1 billion mark two decades later than Daikin, Midea did not reduce its debt ratios in the same way. The firm retains a high debt ratio, which ranged from 61% in 2000 to 59% in 2017. While Midea continuously surpassed Daikin in terms of revenue in 2010, high debt ratios might indicate that less financial leverage might be dampening Midea's financial strength compared to Daikin.

Learning capability expressed as mention of learning in strategic intent was scarcely expressed in Daikin's company reports but played a role in Midea's strategic intent since 2012. In contrast, Daikin was clearer in issuing R&D guidelines, which specified the direction of R&D development for the firm since the late 1970s. Midea only included references to R&D guidelines in its strategic intent from 2005 onwards. Both firms invested in training in production staff and management staff, with Daikin starting in-house training in the 1970s and emphasizing management training during the 1980s. Daikin also installed a training center in Europe and focused on overseas training exchanges to internationalize engineers and management staff. In the 2000s and 2010s several practical training programs for engineers and managers in overseas facilities were introduced. Midea also introduced technical trainings in the 1990s but focused most of its education and training programs on external overseas sales executives, engineers, managers, project managers, and clients. Since the 2010s, Midea also launched specific training programs for management and introduced an E-learning platform for general staff training. Through quantifiable staff training plans, it has created a control system for learning activities since at least 2012. Daikin had an earlier and more extensive focus on in-house training, international training, and R&D guidelines than Midea. Since the 2000s Midea has however improved its learning capability through staff training plans, a strategic focus on learning, management training programs, and an e-learning platform.

International Operation Experience

Daikin displayed low export ratios in the 1970s, while Midea exported most of its electric fans in the 1980s. While Midea entered a joint venture soon after its market entry with an experienced operator in the European market, Midea entered joint ventures with internationally experienced European firms only for its domestic business. Through the merger with its former European JV in the 1970s, Daikin absorbed international operation experience needed for the market, while also operating through local sales agents. Midea meanwhile relied on its local agents between 1980 – 2000. Daikin increased its export ratios to around 25% in 2000 to 74% in 2017, meaning that its expertise accumulated significantly during that time. Midea increased export ratios from 0,92% in 2001, possibly distorted by non-inclusion of OEM exports, to 43% in 2016. While Midea improved its export ratios, its international experience expressed as export ratio remains lower than Daikin's. Besides Midea's shorter presence in the European market with at least one WOS, it also only recently acquired local firms with experience in the market. Daikin has followed this strategy since the 1990s. Both firms have a low percentage of internationally experienced board members, but Daikin's share of international board member was higher.

Entry Mode Choice

Daikin moved rapidly from its initial contractual entry mode of exporting to the cooperative mode of a joint venture. It consequently merged this joint venture into a WOS (administrative, production and warehousing facility), demonstrating an evolution from contractual to hierarchical entry modes in the early 1970s. Midea in contrast, in the first decades of European market entry, stuck to its initial contractual entry modes of exporting and OEM business, with the OEM business being the more prevalent entry mode throughout the 1980s. During the 1980s, Daikin established its first sales division in Belgium as a WOS. During the 1990s, Midea was still operating the European market through strictly contractual modes. At the same time, Midea also acquired more advanced technology through JVs with Italian, Japanese and US firms which opened new product segments. While Midea was involved in Europe through contractual modes, Daikin started an intensive strategy of acquiring its European distributors and sales agents with M&As and then turning them into subsidiaries (WOS), starting with Megatherm in 1993. Taken together with the additional WOS, Daikin set up in Europe as sales and storage facilities, market entry modes at the time are strictly hierarchical in nature. In the 2000s, Daikin continued its strategy of hierarchical market entry modes, turning previous distributors into WOS through M&As and establishing new WOS for production in the Czech

Republic. Of its 16 subsidiaries in Europe as of 2005, 9 had been former sales and distribution agents of Daikin. In 2006 and 2008 Daikin also carried out several very large M&As in Asia and Europe, which extended its advanced product range, production capacity, and sales network. During the 2000s, OEM-based exports continued to play a major role of Midea's business in Europe, but two JVs helped Midea to move production closer to and to produce higher-value products directly for the European market. Additionally, Midea also set up 5 new WOS in Europe. Midea's market entry modes in the 2000s were a mixture of contractual, cooperative and hierarchical entry modes. In contrast to Daikin, Midea's hierarchical entry modes at the time were WOS, where Daikin used both WOS and M&As. In the 2010s, Daikin shifted from a strategy of distributor acquisition to a strategy of large-scale M&A, directed at expanding its technically advanced product portfolio, increasing production capacity and integrating supply chains. Midea in the 2010s continued inwards-oriented JVs with European firms and large-scale OEM production for the European market. The share of products exported as OBM increased. Midea also carried out several large M&As in Europe, which made available a technically advanced product portfolio and an extended sales and distribution network in Europe. In addition to the WOS Midea restructured as part of its acquisitions, the firm also established several new WOS. Midea's entry modes were more diverse than Daikin's, as contractual, cooperative and hierarchical market entry strategies were used in the 2010s.

Entry Mode Characteristics

Entry mode characteristics of Daikin and Midea vary after their initial market entry into Europe in the 1970s and 1980s. Daikin quickly moved from low hierarchy contractual entry modes, briefly into the cooperative mode of a JV, to hierarchical high control modes, like M&As and WOS. Therefore, the relationship between parent firm and subsidiary moved from little control over distributors, to intermediate, to full control over the subsidiary. The Belgian subsidiary would acquire or establish new subsidiaries, which were also fully controlled by the parent firm. The parent firm further controlled decision-making and production system, as the firm was highly centralized in its corporate structure. Daikin has therefore used hierarchical entry modes since its first steps in the EU in the early 1970s. As hierarchical entry modes are strongly linked to high resource commitment, Daikin also committed a great number of resources to its European market entry. Especially the increasing frequency of WOS and M&As, with some being multiple billion USD acquisitions, were characterized by high resource commitment. The preference for WOS and M&As can be described as a preference for quick entry modes with relatively short set-up times, as acquired firms would not need construction or similar delaying activities before starting operation. New WOS production sites were typically set up in one or

two years. The acquisition of full stock and 100% ownership of subsidiaries signify that Daikin preferred entry modes of high ownership. These high levels of ownership also resulted in low technology risk. Midea's entry mode characteristics have stronger variance over time compared to Daikin's. In the 1980s, and 1990s, it relied on entry modes of low hierarchical control, using external sales agents for exports or depending on its OBM partners' production specification. The parent company had little to no control over the distribution and marketing of its products by external firms. Using contractual entry modes, Midea displayed low resource commitment, as it did not establish its own overseas operations. This increased the flexibility of entry, as the initial set-up time was short and entry modes were short-term sustainable. Ownership over foreign operations was non-existent at the time and technology risk was low, given that Midea was on the receiving end of its OBM's technologies. Midea for the first two decades after market entry, chose quick, non-committal market entry modes, while Daikin chose quick, long-term committing strategies for market entry in the first two decades after its market entry. In the 2000s, Midea first started to employ hierarchical, high commitment modes of entry in the European market. Through the establishment of WOS and later high equity M&As, Midea gained strong hierarchical control over its subsidiaries in the market, as it increasingly controlled production and distribution of its products. This meant that Midea was committing more resources to the market than before. With the full ownership of its subsidiaries, the firm also opted for less flexible, long-term sustainable market entry modes. It also had a chance to deploy its strongly centralized corporate structure into its European operations. At the same time, Midea continued to supply the European OEM market and hence exhibited a hybrid state of both entry mode characteristics extremes. While Daikin was solely concentrating on high control, high commitment, less flexible, full ownership and low technology risk entry modes, Midea besides this strategy also kept its low control, low commitment, flexible, non-ownership and low technology risk contractual entry modes as a second mainstay. In the 2010s, Midea used several high-resource commitment entry modes, in some cases increasing ownership gradually. Ownership in the 2010s did not reach 100% throughout the 2010s but remained at majority levels on average. In another M&A, Midea directly acquired majority ownership. Entry modes in this period can be characterized as high in resource commitment, high in hierarchical control, low in technology risk (due to high ownership levels), long-term oriented and high in ownership. Entry mode characteristics have become increasingly like Daikin's entry mode characteristics in the last decade, but a major difference is Midea's remaining OEM business. Although Midea is moving away from low control entry modes, the reliance on this business still makes entry mode characteristics dissimilar with Daikin's.

Differences	
Country-Level	- Domestic Market Demand - Host-Market Dynamism - Cultural Distance - Economic Stability at Market Entry - Host-Market Production Factors in Relation to Domestic Market Factors
Industry-Level	- Development of Industry Size over Time - Market Demand at Market Entry - Restrictiveness of FDI Policy at Market Entry - Timing of Environmental Policy Focus - Extent of Direct Industry Support - Industrial Competition at Market Entry
Firm-Level	- Technology-Intensity of Products at Market Entry - Development of Size and Content of Product Portfolio - Development of Firm Size - Development Timing of Product Differentiation and Adaptability for European Market - Focus on Global Market Expansion, Product Differentiation, and Localization at Market Entry - Timing of Global Strategy Development - Timing of Strategy Aggressiveness - Mix of Aggressive and Non-Aggressive Strategy - Sourcing and Price Value Capability - Competitive Price and Quality Structures of Production - Timing of Innovation and R&D Capability Development - Timing of Marketing Capability Development - Financial Strength measured as Debt Ratio - Timing of Learning Capability Improvement and Focus on in-House Training, International Training, R&D Guidelines, Mention of Learning in Strategic Intent and Availability of Control Systems - International Experience - Entry Mode Choice After Initial Market Entry - Entry Mode Characteristics After Initial Market Entry

Figure 6 Differences of Daikin's and Midea's International Market Entry Strategies in the European Market

6.3 Theoretical Implications

International Product Life-Cycle Theory

Vernon argued that firms internationalize in a successive fashion with their innovative products. Comparing Vernon's cycle stages to the internationalization steps taken by the firms in this thesis, it appears that there are some similarities. One issue must still be raised from the start, as Vernon assumed that the product at the beginning of a cycle would be innovative. In the

cases of both Daikin and Midea, products at the beginning of their trajectory were not innovative in an international sense, as they were based on existing technology from foreign firms. In their home market, their products in many cases were innovative. Daikin was the first firm to produce certain chemicals for refrigeration and one of the first to produce certain types of air conditioners in Japan. Midea also produced products from foreign designs, at a time when few firms had the ability to produce these appliances in China. Looking at the development of the industry, Vernon's assumption that the number of domestic firms increases with higher sales and outputs in the industry can also be confirmed for both the Japanese and Chinese home appliance industries. The data collected in this thesis confirms the fact, that more firms entered the domestic market at a time when both firms were increasing their sales and the appliance industry grew. The second step of Vernon's cycle needs to be viewed critically, as products were not necessarily innovative at the beginning of the market entry. While both firms entered the European market through exporting, their motivation most likely was not overseas demand for an innovative product. Instead, country-level factors such as European market size and government support, industry-level factors such as market concentration and firm factors such as strategic revenue growth through market expansion are the more likely moderators for foreign market entry. Vernon's third stage, the maturity state, again fits well with the cases of the discussed firms. Both Daikin and Midea increased their export ratios over time and stressed the chance of sales and market volume in overseas markets. Vernon's final stage, full overseas production, and import to the home market was not fully reached by neither Daikin nor Midea. While both firms relocated their production to Europe, or close to the European market, they established these production sites to deliver to the European market and not to deliver to their domestic markets. Further, Daikin relocated production to Europe quickly after market entry, while Midea only recently built or acquired production facilities near or in Europe. The findings of this thesis confirm that the product-life-cycle is not the optimal theory for explaining latecomer internationalization in developed markets. While Vernon assumed that internationalization was triggered by overseas demand for innovative products and that firms would always have an advantage in importing their product from overseas, these conditions are not met in the market entry trajectories of Daikin and Midea in Europe. Both firms instead followed different motivations for moving into Europe and produced in Europe primarily for the European market, instead of importing products from the foreign market at the end of the product cycle.

Latecomer Dynamics

As previously discussed, the issues of Vernon's product life cycle theory for latecomer economies explain how countries enter industries and foreign markets quickly compared to western firms. A crucial assumption is that firms enter developed markets predominantly to bolster their technological capabilities. Contrary to the assumptions of latecomer perspectives, Daikin in its early days did not enter the European market to develop its competitive knowledge base. Like Midea, it obtained advanced technology from western firms through OEM contracting and inwards JVs, as western firms were seeking to enter Asian markets. In the European market, Daikin in the early days quickly moved from contractual and cooperative entry modes to WOS and M&As, which were however directed at improving its marketing, production and sales capabilities. Only in 2008 did Daikin start acquiring European firms with the goal of obtaining the technology and an advanced product portfolio. Midea also did not move into the European market with the evident goal of obtaining technology resources. Technological capabilities were obtained from licensing, OEM, inward-JVs and M&As of non-European firms before the 2010s. In the 2010s, Midea similarly to Daikin was moving away from its primary revenue motivation, towards investing in M&As of technology-intensive European firms. It would be easy to mistake Daikin's and Midea's M&A dynamic of the last decade for a symptom of the "fast-follower" process, as it fits well into the studies of East Asian MNE expansion with technology seeking motives. An argument against this view, at least for the discussed cases, is that both firms were present in the European market long before they started technology-seeking M&As of European firms.

Porter's Diamond Model of International Competitiveness

Porter's diamond has provided useful tools to analyze the industry-level of Japan's and China's home appliance industry. Industry structure, industry policies, and industrial competition reveal many similarities in the development of both industries. Given the facts, that both industries received substantial government support for domestic and overseas development, that industrial competition showed similar trends since the 1990s, that both firms were part of industry clusters, and that domestic demand was growing at the time of market expansion, certain similarities help explain the motivations for market entry. Porter argues that these industry factors all influence international market entry strategies. For both Daikin and Midea, policies for foreign market entry were favorable at the time of European market entry, also influencing the direction of product development. Also, the trends of market competition can be used to explain a more similar entry mode choice starting from the 1990s, and 2000s. The argument

here is that both Daikin and Midea increased their numbers of WOS in the European market, as their home markets became increasingly concentrated and as market competition necessitated the development of overseas markets. The even stronger concentration of the industry in the 2000s and 2010s could further be used to explain the increasing number of technology-intensive M&As in Europe, as product differentiation and product portfolio expansion became firm strategy for coping with fierce market competition in both domestic and overseas markets. The challenges of Porter's model became apparent during this thesis in the construction and the application of the framework. Since Porter's variables focus on domestic industry only, it is difficult to draw a clear line between country-level factors and industry-level factors. Industry development is mostly not an independent process from the general economic development of the country. Especially the separation of country-level policies and industry-level policies creates an issue. In this case study country-level policies for economic liberalization were crucial factors, which enabled Daikin and Midea to move abroad in the first place. Further, the narrow focus on domestic industries leaves aside the conditions of the overseas environment entirely. Concerning industrial competition in the target-market, entering the European home appliance market with products that had cost advantages compared to the firms established in a concentrated market, can be regarded as motivating in terms of sales growth for both firms. Understanding that European governments were liberalizing markets and removing protective measures from their domestic electronics industries at the time of Daikin's and Midea's market entry serve well for understanding market entry strategies better. This confirms the notion that industry-level factors are valuable for the analysis of market entry strategy but meet difficulties when analyzed in separation from country-level factors.

The Theory of the Multinational Enterprise

According to Hymer's argument, firms engage in foreign countries to take advantages of the returns that their capabilities allow them to earn and to remove competition between themselves and the competitors of the target market. While this theoretical assumption fits well with Daikin, who entered the European market under their own brand and in direct competition, Midea entered the market primarily under their OBM's brand name and therefore cannot be found to be removing the competition between themselves and the competition. Rugman's theory of exploiting firm-specific advantages against host-country advantages, without suffering high transaction costs, seems more fitting to the analyzed cases. Especially in the case of Daikin, its early shift from contractual entry modes to hierarchical entry modes fits well into the idea of vertically integrating across boundaries to improve firm-capabilities according to host-country

conditions. The inclusion of the theory of the MNE helps to fortify the importance of country-level and firm-level factors for internationalization strategies.

Resource-Based View

The resource-based view and its focus on capabilities have proven themselves valuable to the construction of the framework and the analysis of the selected cases. The analysis revealed that internal resources and capabilities of both firms varied, which also explains variance in strategy. Daikin developed better competitive price and quality structures of production than Midea, while Midea's sourcing and price value capabilities were more abundant than Daikin's. Innovation and R&D capabilities, technological capabilities, financial strength, learning capabilities and marketing capabilities in comparison were more abundant with Daikin until the 2010s. Analyzing the development of capabilities over time reveals an interesting finding. As Midea became more like Daikin in terms of its innovation and R&D capabilities, financial strength, learning capabilities and marketing capabilities, its strategies in the European market also became increasingly similar. This can be interpreted as a logical consequence of capabilities influencing product features, strategy and market entry mode choice. A firm with greater financial strength and innovation and R&D capabilities has the necessary resources to enter markets with resource intensive, hierarchical entry modes. It also has the incentive to enter through high-ownership, hierarchical entry modes for reducing technology risk. While this applies to Daikin in the 1970s, 1980s, and 1990s, Midea was lacking both financial strength and innovation and R&D capabilities during this period. Choosing entry modes of lower resource commitment, which allow the use of the innovation and R&D capabilities of other firms, make more sense against this background. Both firms also profited from their differing competitive price and quality structures, and sourcing and price value capabilities to establish themselves in the competitive home appliance industry. Daikin did so by offering high-quality products at a competitive price, while Midea offered low- to medium range products at low prices. In terms of Dunning's OLI model, this can be interpreted to mean that Daikin exploited its ownership advantages, such as financial strength and technology, its internationalization advantages such as technology intensity, and its locational advantages, such as domestic economic conditions, to establish itself in the European market. Midea, on the other hand, did not possess any of the classic ownership advantages described in the OLI model but profited from favorable internationalization advantages, such as scale effects, and locational advantages, such as strong institutional support in the domestic market. This brief comparison to the OLI model is of course not in-depth but reveals how resource-based views help determine influential

factors for market entry strategies of firms and the reasons for strategy variance at a certain point in time.

The Institution-Based View and the Uppsala Internationalization Process Model

The UIP model has been a popular model to analyze the sequential succession of entry modes, which assumes that commitment increases as firms overcome the risk and uncertainties of foreign markets. The analysis revealed that both firms had no prior international experience in the European market. According to the calculated Hofstede Index of cultural distance, both firms also experienced comparatively high levels of cultural distance in the market, which according to the UIP model makes market entry more difficult. Since both firms experienced lack of local market or institutional knowledge, the UIP prediction of market entry through low-commitment market entries hold true for both Daikin and Midea. Both firms entered the market through agents in the market, which supplied them with the necessary market knowledge and cultural experience. The UIP model further argues that firms will follow a sequential pattern of increasing market commitment strategies in the foreign market, as their experience increases. This sequential pattern of increasing market commitment can be detected in Daikin's market entry strategy choice. The firm moved from contractual entry modes to cooperative entry modes, onto hierarchical entry modes. Over the period of observation, Daikin increased its market commitment considerably, adding high commitment WOS and M&As to its strategies as time progressed. The sequence of exporting, JV and its first WOS happened within a relatively short period of time in the 1970s, while the subsequent resource commitment increases took place over several decades. Finding basic similarities with the basic UIP model converges with the findings of Chang (1995) and Hemmert and Jackson (2016), who also found basic similarities of Japanese entry strategies and the UIP model in developed markets. For Midea, the case rests differently. The Chinese firm shares the initial low resource commitment entry with Daikin but continued to operate the European market through low commitment entry modes for two decades. In the 2000s, the firm directly moved from the low commitment entry mode of OEM to the high commitment mode of WOS. In terms of the UIP model, this contradicts the notion of a sequential process via medium-commitment entry modes like joint ventures. Furthermore, Midea increased its commitment with a strong focus on M&As in the 2010s, like Daikin. Midea's approach cannot be interpreted as easily through the IUP model as Daikin's since it skipped market entry modes of the classic IUP sequence. Instead, Midea's entry strategies conform to the Chinese pattern of market entry strategy described by Cui and Jiang (2009), Hong and Sun (2006) and Zhang and van den Bulcke (1996). The findings

correspond with the Chinese pattern of exporting, followed by inward joint ventures with developed country firms, followed by first WOS and finally M&A activity.

Organizational Learning, Latecomers and Network Theory in the UIP

While Daikin's market entry strategies fit in better with the classic UIP model, Midea displayed deviation from the typical sequence of entry modes. One possible explanation for this phenomenon discussed in latecomer theories, is the explanation of business networks substituting for market knowledge. While Midea did not directly engage in cooperative entry modes in the European market, it had established inter-industry networks with foreign firms in China since the 1990s. Dunning (2015) noted that interaction with a variety of industry actors builds up a business network, which aids in overcoming outsidership in new markets. In Midea's case, the firm had built up an extensive network of foreign firms from Europe and Japan since the 1990s, to which it was connected through OEM contracts and equity alliances. Although this phenomenon needs further in depth-study of network effects, network theory offers a plausible explanation of how Midea overcame outsidership in the European market and skipped stages of the sequential entry process. The role of capability building should also be considered in overcoming market entry barriers. Since Daikin also displayed similar tendencies in building up inter-industry alliances, the role of its business networks in its internationalization process would also be an interesting subject for further study. Regarding the theory of entrepreneurship, the case study does not provide evidence for the influence of experienced international entrepreneurs working within the firm, to catapult it into foreign markets. Both firms were found to have moderate levels of internationally experienced management executives on their board of directors. Another alternative explanation offered in addition to the UIP model is the influence of accelerated learning. Since both firms are not found to be particularly strong in their learning capabilities at the time of their market entry, this explanation also seems less likely.

6.4 Limitations and Need for Further Research

The data collection for this thesis was flawed in several ways. On the country level, data is more reliable when extracted from large databases such as the OECD and the World Bank. At the same time, data is not always available for all indicators throughout the entire period of observation. This leads to an analysis, which does not rest on the full catalog of indicators for the entire period of observation. To supplement missing data, the analysis for missing years relies on either partial indicators or assessments of secondary sources. While this is less than

ideal, this strategy at least established general trends for periods of missing data, which can be used to establish the country-level conditions at an acceptable quality. Another issue with data collection is the treatment of the European market at its current state, including all current 28 member states. As the European single market was created and new members joined the EU, overall conditions and statistics naturally changed. For one, European countries are highly diverse and the indexation of all countries in various compositions will lead to a broad generalization of host-country conditions. A perfect example of this is the indexation of Hofstede's cultural measures, which vary considerably and the indexation of corporate tax rates, which also vary between European countries. The very low corporate tax rates of Belgium in the early 1970s, for example, can be considered a highly favorable host-country condition for Daikin's market entry but will be masked by the higher corporate tax rates of other countries at the time. For the index of cultural distance, the variance of Hofstede's cultural dimensions over the years are not accounted for, so that there would be a need to investigate, whether the cultural distance between China, Japan, and the EU has changed over time and whether increasing political and economic openness has influenced measures of cultural distance. Another issue of the country-level factors is the construction of the political risk index. While index created by PRS group might be weighted and adjusted to accommodate for certain issues, the index created for this thesis weighs all components equally, neglecting changes within the dimensions. As the scope of this thesis is limited, the interpretation of sub-category variance of the political risk index should be further discussed in studies concerning internationalization strategy variance among different European countries.

Data collection for industry-level factors was among the most challenging tasks in this thesis. Extensive industry studies of the Chinese, Japanese and European home appliance market are available as fee-based commercial services. Due to the limited accessibility of information, data quality is lacking in some parts of the analysis. While industry policies can be analyzed more easily, data on industry structure and industrial competition, especially during the 1970s and 1980s, needs improvement. To offer an improved understanding and complete analysis of the home appliance industries of China, Japan and Europe, there is a need for further studies. These studies should especially concentrate on home appliance industry stability, industry growth, and industry productivity. The analysis offered in this thesis still offers an important insight into the industry structures, policies, and competition of a so far understudied industry field.

On the firm level, data is limited to the obtainable company reports, which for Daikin includes the information from the Japan Company Handbook in the 1970s. For Midea, no comparable source exists, as efforts to create similar publications are only just underway recently. Instead,

this thesis founds analysis on secondary sources, such as “Shaping the Future”, published on occasion of Daikin’s firm anniversary and Cortesi (2011)’s doctorate thesis for Midea. Relying on secondary data sources is naturally subordinate to collecting primary data for analysis. Since the late 1990s firm data becomes available from company reports, which e.g. allows the extraction of primary data from balance sheets. An issue with these balance sheets are the differing standards of accounting, which not only change over the years but also make the comparison of firm cases more difficult. Determining exact advertising expenses becomes nearly impossible, as these expenses are not listed separately and constantly in firm balance sheets. Further, reported values in the company reports often varied from data in secondary sources, especially concerning the number of employees. For the sake of consistency, this thesis relies on the data as reported by the company. Another issue is the lacking data for analyzing management capability in overseas environments. Perhaps, future studies in cooperation with the analyzed firms could concentrate on observational studies of decision-making and local staff management capabilities in European subsidiaries of East Asian firms.

Besides the mentioned limitations and the resulting need to collect improved data on the country- and industry-level factors, there is a variety of interesting research directions which have emerged from the findings of this thesis. For instance, the topic of East Asian inter-industry firm networks at European administrative and manufacturing locations provides a perspective for further research. While not directly the focus of this thesis, there also seems to be a need to study inter-European country- and industry-level industry differences and how they influence market entry strategies of East Asian firms in the European market. The more focused study on M&A strategies of East Asian firms since 2010, regarding investment, negotiations and policy influences, would also provide an interesting topic for further research. While the comparison of two firms is well suited for the scope of this thesis, broader studies including all major players of the home appliance industry will be a task for future studies.

7 Conclusion

This thesis posed the research question of what similarities and differences can be observed in the international market entry strategies of Japanese and Chinese high-technology MNEs in the European market. Through the establishment of an eclectic framework and a comparative case study analysis of the two home appliance firms Daikin Industries and Midea Group, this thesis identified differences on the country, industry, and firm-level of analysis.

On the country level, similarities include an attractive host-market size, strong market concentration at the time of market entry, stable government intervention and similar levels of political openness. Country-level differences were domestic market demand, host-market dynamism, cultural distance, economic stability at the time of market entry and varying host-market production factors in relation to domestic market factors.

On the industry level, both Daikin and Midea had similar industry structures in terms of local industrial clusters and possible productivity advantages of MNEs. In industrial policy, both firms enjoyed the policy support of national and local government, as well as the support of government ministries. Industrial competition for both firms was increasingly intense in both domestic industries since the 1990s, creating an oligopolistic environment. Daikin and Midea's industry structure differed in development of industry size over time and market demand at the time of European market entry. Industry policy in Japan at the time of Daikin's market entry was less restrictive regarding outwards investment, focused on environmental concerns earlier and supported the industry less directly than industry policy in China. Industrial competition also differed for both firms at the time of market entry, as Daikin experienced less competition in its domestic market compared to Midea at the time of its European market entry.

On the firm level, both firms manufactured products with a similar level of technology-intensity, earning a large share of revenues in the HVAC business. Both firms similarly depended on foreign firm technology to enter the European market with non-differentiated and non-adaptable products. Both firms also emphasized the development of a differentiated and adaptable product portfolio for the European market in the 2010s. Strategy similarities were the emphasis on revenue growth and technology upgrading since market entry and an emphasis on localization, market expansion and product differentiation in the 2010s. Midea's strategy in the 2010s was similar to Daikin's strategy of the 2000s regarding aggressiveness, as well as goals and objectives. For firm capabilities, both firms were integrated into business and production networks, strove to improve their dynamic capabilities and developed their technological capabilities from external dependency on foreign firms to in-house technology capabilities. Both firms further lacked international management capability and improved their financial strength since market entry into Europe.

Differences between Daikin and Midea were found in the development of firm size. Daikin started out as the larger organization but was overtaken in size by Midea in the 2010s. Product features differed in technology-intensity at the time of market entry, the development of size and content of product portfolio and the development timing of differentiated and adaptable

products for the European market. The analysis of the strategy revealed an earlier and more aggressive strategy development on Daikin's side. Goals and objectives were more extensive at the time of market entry and for the following decades for Daikin, as the firm, besides domestic market expansion and technology upgrading, focused on global market expansion, product differentiation, and localization. While Daikin employed an aggressive strategy in Europe, Midea depended on a hybrid model of non-aggressive and aggressive strategies. Regarding capabilities, firms differed in sourcing and price value and competitive price and quality structures of production. The timing for developing innovation and R&D capabilities and technological capabilities left Daikin with better capabilities compared to Midea. Both firms also differed in their timing of marketing capability development. Financial strength as a capability was dissimilar regarding the development of debt ratio. The timing of learning capability improvement and the focus on in-house training, international training and R&D guidelines, mention of learning in strategic intent and availability of control systems differentiated Daikin from Midea. Daikin also developed stronger international experience since its European market entry. Entry mode choice differed in its sequential structure over time. Daikin quickly moved from contractual, to cooperative and then to hierarchical entry modes only, while Midea employed contractual entry modes for decades before diversifying through hierarchical entry modes. Daikin's and Midea's entry mode characteristics differed from the time shortly after market entry onwards in hierarchical control, resource commitment, ownership, flexibility, and technology risk. Despite growing similarities in the 2010s in entry mode characteristics, Midea's continuous OEM causes a difference in entry mode characteristics.

The most important theoretical implications of these findings are, that analyzing market entry strategy on the country, industry, and firm-level based on an eclectic framework is useful to understand the complex relationships of these factors in internationalization processes. The findings also reveal that Daikin's market entry strategies in the European market displayed basic similarities with the UIP model, while Midea's entry strategies displayed deviation from the classic UIP sequence of entry modes. Midea's sequence instead confirms the basic patterns of Chinese latecomer market entry strategies in developed-country markets, as found in Yang, Jiang et al. (2009).

Collecting case study evidence on East Asian high-technology is relevant to internationalization research since in-depth case research on East Asian firm market entry strategies in the European market so far has remained underdeveloped. Case studies either focus on western markets in general or on specific European countries. In the light of the sensational media coverage and

policy discussion over restricting East Asian investment in the European Union, the question of similarities and differences of the international market entry strategies of Japanese and Chinese high-technology MNEs in the European Market is a highly relevant topic. The findings of this thesis show that, while there are some similarities in the country and industry factors influencing Japanese and Chinese market entry, there are also a great number of differences.

Findings in this thesis reveal that Midea's entry strategies differed from Daikin's entry strategies during decades. This discards the argument of Hemmert and Jackson (2016) that there is a distinctly East Asian internationalization pattern. Instead, this thesis allows an insight into the complex differences of country and industry factors, which contribute to different market strategies over time. The study of the Japanese and Chinese home appliance industry, which to this point has scarcely been studied in industry-based internationalization literature, is also a relevant addition to internationalization literature. By demonstrating the interlocking of the country and industry factors for determining market entry strategies, this thesis further provides a crucial argument for an eclectic approach to internationalization. Market entry strategies of Daikin and Midea as examples were influenced by differing domestic and target-market environments, which allowed the development of different firm-capabilities, product features, and strategies. Through case studies like this thesis, policymakers and industry participants gain a deeper understanding of past and future developments of East Asian high-technology MNEs in the European market. European policymakers might better understand the direct influence of domestic East Asian policy on domestic industry development, which they themselves cannot directly influence. Further, the increased Japanese and Chinese M&A activity in the European market is not truly surprising, given the development of their country- and industry-level factors. Instead, increasing strategy aggressiveness in Europe is a logical consequence of the policy support, increasing industrial competition and the upgrading of capabilities and products East Asian MNEs experience at home. Creating restrictive policies to protect European industries from East Asian market entry is a hence questionable goal for policymakers, given the fact that both Daikin and Midea entered the market under more restricted market conditions previously. By carefully studying target-country factors influencing entry mode choice, European policymakers could potentially still devise more effective strategies for handling the recent market entry mode choices connected to high technology risks.

For the European home appliance industry, it is both relevant to observe the development of Japan's and China's industry and to observe firm-strategies over time. Through this analysis of firm size, firm products, firm strategies, firm capabilities, and international experience industry actors will understand that East Asian firms have upgraded their products and capabilities to

match those of western counterparts. For instance, innovation, R&D capabilities, and technological capabilities were crucial to both Daikin and Midea to advance their product portfolio and compete with their western competitors in the overseas market. Through an in-depth analysis of their capabilities like this one, developing-country firms can devise market entry strategies for developed markets, which match their resources and help to improve needed capabilities. Developed-country firms of the home appliance industry through similar analysis can assess the kind of competition they will need to expect from their East Asian counterparts in the future. This especially includes the development of the “green” or “smart” home appliance segment, which is currently being developed by both Daikin and Midea.

In summary, the findings of this thesis are relevant because they confirm previously established patterns for Japanese and Chinese MNEs in developed markets. They are also relevant because they present the similarities in market entry strategy as a product similar country, industry and firm-level factors, while also revealing significant differences in market entry strategies at the firm level during decades. While Western policymakers and media have reacted in a strong fashion to recent Chinese M&As, this thesis confirms that this is not the repetition of the Japanese phenomenon of the 1980s, but the logical product of a chain of country, industry and firm-level developments over time, which have provided East Asian MNEs with the tools to compete on equal footing with western MNEs.

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9 Appendix

9.1 English Abstract

Sparked by an increased scholarly interest in recent Chinese M&A activity in Europe, this thesis investigates the research question of what similarities and differences can be observed in the international market entry strategies of Japanese and Chinese high-technology MNEs in the European market. The research purpose was to uncover similar internationalization patterns and to add to the ongoing debate on sequential firm internationalization in developed markets. To this purpose, this thesis provides case-level evidence from East Asian market entries into the European market. Two East Asian home appliance MNEs, Daikin Industries and Midea Group, were analyzed in a comparative case study approach, applying an eclectic framework of analysis. Data was collected from databases, firm reports, secondary literature, websites, etc. and analyzed on the country, industry and firm-level. The analysis established similarities and differences at all levels of analysis. The findings confirmed existing theoretical observations on Japanese and Chinese MNE market entry strategies into developed country markets. Daikin's market entry strategies fit best with the basic sequence of the Uppsala Internationalization Model, while Midea's market entry strategies fit best with the typical Chinese "latecomer" sequence for entry into developed-country markets. Further, entry strategies during the initial entry into Europe were found to be similar and to have converged increasingly since 2010.

9.2 German Abstract

Aufgrund des zunehmenden wissenschaftlichen Interesses an den jüngsten chinesischen Firmenfusionen und Übernahmen in Europa, untersucht diese Arbeit die Forschungsfrage, welche Ähnlichkeiten und Unterschiede in den internationalen Markteintrittsstrategien japanischer und chinesischer Hightech-MNU auf dem europäischen Markt zu beobachten sind. Der Forschungszweck bestand darin, ähnliche Internationalisierungsmuster aufzudecken und zur anhaltenden Debatte über die sequentielle Internationalisierung von Unternehmen in entwickelten Märkten beizutragen. Zu diesem Zweck liefert diese Arbeit Fallbeispiele von ostasiatischen Markteintritten in den europäischen Markt. Zwei ostasiatische Hausgeräte-MNU, Daikin Industries und Midea Group, wurden in einem vergleichenden Fallstudienansatz unter Verwendung eines eklektischen Analyse-Frameworks verglichen. Die Daten wurden aus Datenbanken, Unternehmensberichten, Sekundärliteratur, Websites usw. gesammelt und auf Länder-, Branchen- und Unternehmensebene analysiert. Die Analyse ergab Ähnlichkeiten und Unterschiede auf Länder-, Branchen- und Unternehmensebene. Die Ergebnisse bestätigten

ferner bestehende theoretische Beobachtungen zu Markteintrittsstrategien für japanische und chinesische MNU in Industrieländermärkte. Die Markteintrittsstrategien von Daikin passen am besten in die Grundsequenz des Uppsala Internationalisierungsmodells, während Midea's Markteintrittsstrategien eher mit dem typischen chinesischen "Latecomer"-Modell für den Eintritt in Industrieländer übereinstimmen. Die Einstiegsstrategien während des ersten Eintritts in Europa erwiesen sich zusätzlich als ähnlich und konvergierten seit 2010 zunehmend.

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