Developing high-technology latecomer firms to compete internationally: A three-sector growth model

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Abstract

In contrast to the mainstream approach, which focuses exclusively on how foreign multinational enterprises move into developing countries, this paper researches how high-technology latecomer multinational enterprises grow from the domestic institutional context into the international market. It draws on the economic development theory and the dynamic capabilities perspective to present a three-sector growth model to understand how high-technology latecomer firms establish themselves in international competition through the interplay of the social sector, the state, and the market. The three sectors may work together when they are pushed by external threats or pulled by internal interests. High-technology latecomer firms, at the stage of “getting there,” would call for the caring hand of the social sector; at the stage of “staying there,” would need the competition of the market; and between these two stages, the discipline of the state.

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1. Introduction

The study of foreign multinational enterprises (FMNEs) in developing countries occupies a central position in the field of international management. A typical FMNE from a developed country has hundreds of business units, which are actively participating in scores of developing countries. Through their international networks, FMNEs have an advantage of being able to transfer moveable resources across national borders to be combined with less mobile ones, in response to local opportunities (Bartlett and Ghoshal, 1998). In sum, as Stopford and Wells (1972) long stated, at the core of the theory of FMNEs is the management of size and diversity.

However, as Calas and Smircich (1999: 650) asked, “what is represented and what is not represented in organizational theorizing?”, it is conspicuous that, thus far, researchers have made little effort to investigate latecomer multinational enterprises (LMNEs) from developing economies. This neglect is probably, in part, due to the fact that third world multinationalism was regarded for so long as a contradiction in terms (Heenan and Keegan, 1979) and, in part, due to the fact that scholars are plagued by parochialism and, thus, are not sufficiently aware of non-American MNEs (Dunning, 1989). This paper thus aims to bring LMNEs from the periphery to the forefront of international management research.
A main research agenda in the extant international management literature is to link the characteristics of FMNEs to performance. For example, studies have examined how product diversity (Tallman and Li, 1996; Hitt et al., 1997), organizational slack (Nohria and Gulati, 1996), and mode of entry (Barkema and Vermeulen, 1998), as well as ownership, international geographic scope, and location (Dunning, 1980) influence performance. However, researchers who use this cross-sectional approach have largely ignored the longitudinal nature of how a firm’s advantage is created and sustained. Although a few researchers (Wilkins, 1970; Chandler, 1986) recognize the importance of this process, unfortunately, their contribution has been primarily in analyzing the experiences of FMNEs, not LMNEs. To complement the orientation of previous cross-sectional research, the model developed in this paper contains a longitudinal component.

LMNEs, according to David Teece (2000: 124), are regarded one of the “engines” in the economic development process in the newly industrializing economies, through which process the levels of living of common people could be enhanced. In line with this view, some scholars, when researching economic development, employed LMNEs as their unit of analysis. For example, Alice Amsden (1989) found that large, diversified business groups (i.e., chaebol) are an institutional characteristics of late industrialization of South Korea. Another economic development scholar, Peter Evans, also uses LMNEs, particularly in the information technology industries, as analytical focus to explore the economic development in Korea, Brazil (Evans and Tigre, 1989) and India (Evans, 1992). A recent report by OECD, arguing that it is worthy exploring that how firms from developing countries manage to internationalize, shows that there is a strong association between the growth of LMNEs and economic development (Bonaglia and Goldstein, 2007).

LMNEs today have a larger presence than ever before in the international market, and some of them have made it into the Fortune 500 (Business Week, 2001; Mathews, 2002). Thus, the motivation for this article stems from the unique institutional context of developing countries that could cultivate successful LMNEs. Economic development scholar Amartya Sen (1999) once argued that economic development could be regarded as the enhancement of the capabilities of latecomer firms; whereas international business scholar Dunning (2006) recently also maintains that the resource, capabilities, and market opportunities of the local firms are crucial to economic development. This paper hence advances the argument that the growth of LMNEs in a developing country presents a fascinating opportunity to integrate economic development theory and the dynamic capabilities perspective. Moreover, inspired by Joseph Stiglitz (1998) who contends that the issue of economic development is one of balance among the three sectors (i.e., the state, the market and the social sector), this paper contributes to the international management by addressing how, through a balanced influence of the three sectors, LMNEs develop their capacities to compete in the international market.

To answer the question “how to develop LMNEs to compete internationally,” this paper begins by building a three-sector growth model, focusing on the longitudinal process that latecomer firms move through from “getting there” to “staying there” (Mintzberg, 1989: 367). Latecomer firms, at the stage of “getting there,” would call for the caring hand of the social sector; at the stage of “staying there,” would need the competition of the market; and at the transition stage between these two stages, would need the discipline of the state. This three-sector growth model is in line with the economic development literature that suggests, as latecomer firms mature, they should be able to stand market competition (Boisot and Child, 1996; Nee, 1989). Yet, what leads to the establishment of LMNEs in the international market remains less clear. Thus, this paper further identifies the conditions under which the three sectors would work together and the way in which they would have the division of labor. In summary, this paper adopts an “Inside-Out” approach in order to understand how LMNEs grow from the domestic institutional context into the global economy, in contrast to the mainstream “Outside-In” approach, which focuses exclusively on how established FMNEs move into developing economies.

This paper pays special attention to the high-technology industries in Asia because since the 1980s, high-technology industries, especially electronics, have been the largest, fast-growing export sector in Asia (Hobday, 1995), and out of the top ten global LMNEs, three were from Taiwan’s semiconductor and telecommunications industries, two were from China’s telecommunication industries, and one was from South Korea’s semiconductor industries (Business Week, 2001). Another survey conducted recently by Boston Consulting Group (2006) revealed that, 44 of the top 100 global LMNEs were from China, and 21 were from India.1 Provided the focus of this paper is on the high-technology

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1 Excluding South Korea and Taiwan, the countries included in the BCG’s report are Brazil, China, the Czech Republic, Hungary, India, Indonesia, Malaysia, Mexico, Poland, Russia, Thailand and Turkey.
industries in Asia, it should be noted that the way by which latecomer firms develop capabilities to compete internationally differs from sector to sector and from area to area. Therefore, the generalizability of the model developed here is limited to the degree to which the contextual situations were relevant to the setting being discussed in this paper.

In the following, this paper proceeds to provide an overview of scholarly debates on economic development over the decades. The scholars selected are the pioneers of economic development theory (see Bauer et al., 1984). In ways similar to Lindauer and Pritchett (2002), the big ideas of those pioneering scholars will be traced here. After exploring how latecomer firms develop capabilities through a balanced influence of the three institutions, such as the market, the state and the social sector, this paper then identifies the two organizational learning and growth traps common to LMNEs. A discussion of the implication and limitation of this model and possible directions for future research will also be provided.

2. Economic development: the market, the state, and the social sector

2.1. Market-driven economic development

Market-driven economic development was pioneered by Walt Whitman Rostow, one of the most important scholars in modernization theory. In 1960, Rostow published his most famous book *The Stages of Economic Growth*. The message of the subtitle of the book, *A Non-Communist Manifesto*, was clear: if poor countries intend to develop, they should adopt capitalism, not communism. In his view, the market was the key to economic development, which was composed of five stages: traditional societies, the preconditions for take-off, take off, the drive to maturity, and the age of high mass-consumption. To modernize is to move one country from the lower stage to the higher one, and every country would follow the same path.

In line with Rostow’s argument, the World Bank proposed a market-friendly approach to explain the economic success of seven Highly Performing East Asian Economies (HPAE). To augment Rostow’s modernization theories, the World Bank delineated a limited role for government: “to get the fundamentals right.” The state was supposed to provide no more than the following fundamentals: (1) a stable macro-economy, (2) high human capital, (3) effective and secure financial systems, (4) measures to limit price distortions, (5) an open market for foreign technology, and (6) agricultural development policies (1993: 88). Such policies are labeled as market-friendly. In explaining what caused East Asia’s success, echoing Rostow, the World Bank (1993: 5) claims: “In large measure the HPAEs achieved high growth by getting the basics right”.

In sum, the theories of market-driven economic development argue that the invisible hand of the market is the most efficient way of allocating resources for economic development, and suggest that the role of the state is only to provide the necessary infrastructure.

2.2. State-driven economic development

In the 1970s, there was a paradigm shift in economic development theory, “from Rostow to Gunder Frank” (Foster-Carter, 1976). Based on the experiences of Chile and Brazil since the eighteenth century, Gunder Frank (1967) argued that one should regard economic development and underdevelopment as two sides of the same coin, rather than as two sequential stages, as suggested by Rostow. For example, Chile and Brazil were forced to integrate into and participate unwillingly in the global capitalist system. Once integration was complete, the global capitalist system then was polarized into an exploitive metropolis–satellite structure, leaving satellites underdeveloped due to a lack of access to their own resources, which were exported to the metropolis. Accordingly, Frank suggests that the government should step in to set up high tariffs, adopt import substitution policies, and reject foreign aid and foreign multinational corporations. This was quite contrary to what Rostow suggested: open the market and accept foreign political and business entities to help local development.

Later, the theories of developmental states that began to surface complemented Frank’s dependency theory by dealing explicitly with how the state could develop local firms. Based on Japan’s post-war economic development

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2 This paper adopts North’s definition of institutions as “a set of the rules, compliance procedures, and moral and ethical behavioral norms designed to constrain the behavior of individuals in the interest of maximizing the wealth or utility of principals” (1981: 201–202).
experience, Johnson (1982) found that the Japanese government went into the market and manipulated it. This way of the state intervening in the process of economic development is called the market-conforming method because it still preserved market competition. Examining South Korea’s economic development, Amsden (1989) proposed a market-augmenting paradigm in which the goal of state intervention was not to comply with the market mechanism, but to distort it. Not only providing subsidies to firms as a way of influencing the market to deviate sharply from free-market competition equilibria so as to “get the price wrong,” the state also disciplined the bad-performing firms. Another similar important work on developmental states is Robert Wade’s (1990) Governing the Market, which explained the history of Taiwan’s economic development from the 1930s to the 1980s. He found that the Taiwanese government led rather than followed the investment preference of latecomer firms.

In 1995, Peter Evans (1995) published Embedded Autonomy to answer a question: what is a healthy relation between the state and the market? This question had received relatively little attention in previous works in that Johnson (1982), Amsden (1989), and Wade (1990) focused solely on how the developmental state interacted with business in different ways: the state was supportive of business in a cooperative way as in the case of Japan (Johnson, 1982), in a disciplinary way as in the case of South Korea (Amsden, 1989) and in a guiding way as in the case of Taiwan (Wade, 1990). Evans proposed the notion of embedded autonomy to depict sustainable relations between the state and the economy: The state first must have its own administrative autonomy, free from the influence of the private sector; however, in order to avoid being insulated from the rest of society, it also needed to be embedded in social communities that had ties to business. Doing so would allow it to have continual communication with the private sector.

In sum, the theories of state-driven economic development argue that the state should take a more active role than just providing infrastructure. They maintain that the developmental state could allocate resources as efficiently as the market does by cooperating, disciplining, and governing the latecomer firms, as long as the government keeps its embedded autonomy in the economy.

2.3. Social sector-driven economic development

In the late 1990s, scholars of economic development gradually realized that neither the government nor the private sector have the capacity to fulfill the promise of economic development (Garilao, 1987). Accordingly, social sector organizations are regarded as “promoters of alternative development strategies” (Drabek, 1987: x). The social sector, as indicated by other similar terms used in the relevant literature, such as not-for-profit and non-governmental, operates between the public and private sectors, and covers a variety of organizations, including trade associations, churches, public research institutes, cultural institutions, advocacy groups, political movements, charities, and foundations (Roelofs, 1995; Mintzberg et al., 2005).

Take trade associations for example. Saxenian and Hsu (2001) found that business associations in Taiwan could complement the market by transferring technology knowledge that is hard to codify from firm to firm. In China, it was observed that many associations like China Telecommunications Industry Association, China Information Industry Association, China Computer Industry Association and China Software Industry Association, were involved in the coordination among firms in the computer-related industry (Kraemer and Dedrick, 1994). In India, Athreye and Chaturvedi (2007) found that the National Association of Software and Service Companies provided the collective goods for local firms, such as launching collective marketing campaigns that normal small entrepreneurial start-ups could not afford.

Another noteworthy social sector organization is public research institutes. Very often public research institutes are created and supported by the government and could be regarded as quasi-governmental organization. Nonetheless, following Mintzberg et al. (2005), this paper regards them as benefit associations of social sector in that they provide technological service to latecomer firms. According to Crane (1977), private small and medium-sized enterprises in developing countries could not afford research and development, so public research institutes were crucial to the building of their technological capabilities.

For example, the Chinese Academy of Science (CAS)3 played a major role in innovation in the information technology industry after the economic reform. Its contribution was in transferring its previously accumulated

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3 Though Chinese government founded the CAS in 1949, it strived to keep CAS independent of politics. In 1954, China’s State Council decided that the CAS was no longer regarded as a government unit under the supervision of State Council so it became an independent entity (http://www.cas.ac.cn/asp/U/q1.asp?y=1954).
technology to the industry by way of spin-offs (Cao, 2001). Another example is Taiwan’s Industrial Technology Research Institute, which helped Taiwan enter the semiconductor and personal computer industry by transferring outdated technology from United States (Chen and Sewell, 1996; Chang et al., 1999). It should be noted that in both cases, local firms just tapped into and commercialized the transferred technologies without radical modification. In sum, the theories of social sector-driven economic development focus on the rise of different sorts of social sector organizations and highlight the neither-state-nor-market feature of development strategies.

3. Balancing the three sectors

Whether it be modernization theory in the 1960s, dependency theory in the 1970s, the market-friendly approach in the 1980s, developmental state theory in the early 1990s, or social sector theory in the late 1990s, scholars have continually tried to argue that it is either the state, the market, or the social sector that is the key to economic development. However, some scholars have tried to swim against the tide, calling for an end to such ideological debates. For example, Lindauer and Pritchett (2002: 15) pleaded for a “less polemic, more nuanced discussion.” In Towards a New Paradigm for Development: Strategies, Policies and Processes, Stiglitz (1998: 9) stated that “the issue [of development] is one of balance, and where that balance is may depend on the country, the capacity of its government, the institutional development of its markets.” These scholars suggest that there is a need to strike a balance among the three sectors, which implies that, developing LMNEs require all of them. Perez-Aleman (2000) went a step further to delineate how the three sectors could work together. She found that in Chile’s economic development, the state took steps to redefine the role of trade associations, which, instead of trying to get something from the state, became development-oriented, cooperating with the government to help local firms enhance their ability to compete in international markets.

Yet, one may argue that the influence of the three sectors on the economic development does not have to be a top-down process, as described by Perez-Aleman (2000). Was the process in Chile top-down because of the Pinochet government, or were there other influential factors? How could the three sectors get involved in the economic development otherwise? Could it be a bottom-up process? Thus, this paper has the following research question: What are the roles played by the three sectors in economic development? This grand research question is then narrowed down to the following two questions of conditions and division of labor: Under what conditions could the three sectors work together? And, what is the division of labor among the three sectors? Fig. 1 provides a graphic summary of these research questions.

4. Conditions

4.1. External threats

Some economic development scholars have recognized that there is a need for the three sectors to cooperate (Uvin et al., 2000; Thomas, 1992). Yet, there has been relatively little discussion on the conditions under which this could happen. Studies have shown that, although the three sectors have different operating logics and seem to be at odds with one another, they might get along when the nation faced an unstable situation of extreme danger or difficulty in the course of its economic development.

For example, in Korea, there emerged a nationwide consensus on the way to develop the economy when the population as a whole felt vulnerable under the military threat of North Korea (Porter, 1990; Wade, 1993). In Taiwan, the cooperation of the three sectors was triggered by a series of political suppression by China in the international arena and global economic difficulties in the 1970s (Wade, 1990; Liu, 1993; Tzeng, 2004), and the development of the Taiwanese firms’ capabilities was the result of the decade-long co-evolution of the state’s public research institute-based industrial technology policy and the capacity-building initiatives of the firms themselves (Breznitz, 2005).

**Proposition 1a.** The three sectors are more likely to work together when they are pushed by external threats.

4.2. Internal interests

By contrast, some countries might have quite a different situation. For example, in China, it appeared that the three sectors worked together deliberately when spontaneous entrepreneurial start-ups were making profits in the Zhongguancun area of Beijing in the early 1980s (Cao, 2001; Tzeng, 2004). The rapidly increasing number of private
enterprises drew the attention of social sector organizations and propelled the government to launch the National Torch Program in 1998 (Segal, 2003). Specifically, Lu and Lazonick (2001) found that the technological achievement of Chinese firms is the product of their investment strategy, the state’s science and technology policy, and the ability of public research institutes to successfully mediate between the state and the market. In a similar manner, with the goal of realizing the potential growth of booming software industry, India’s National Association of Software and Service Companies worked closely with the government to construct science and technology parks to incubate new entrepreneurial start-ups (Athreye and Chaturvedi, 2007).

Proposition 1b. The three sectors are more likely to work together when they are pulled by internal interests.

5. Division of labor

As mentioned earlier, this paper differentiates the growth process of LMNEs into two stages: “getting there” and “staying there,” and, at this point, it is speculated that different stages would require different sectors to aid the growth of the firms. Thus, the following question is raised: What is the division of labor among the three sectors?

5.1. Getting there: the caring hand of the social sector

As for the stage of “getting there,” let us first consider the market. Could we rely on the market to grow the nascent latecomer firms to the point where they could internationalize? The main message of the market-friendly approach is the survival of the fittest and the strongest. However, small and medium-sized latecomer firms usually lack the technological capabilities to compete with the giant multinational corporations on the so-called level playing field (Mathews, 2006). As a result, latecomer firms are often wiped out by the “perennial gale of creative destruction” brought on by large FMNEs (Schumpeter, 1942: 84). Park (2004) observed that nascent industries in developing countries were often terminated by international competition due to premature full exposure to the global market. This
suggests that latecomer firms would have fewer chances to get to the international market, let alone stay there. Based on
the above literature review, we might not rely on the market to grow the LMNEs at the stage of “getting there.”
Let us then consider the state. Of the theories of developmental states, Amsden’s (1989) disciplinary state is the most
concerned about the growth of latecomer firms. The disciplinary state does three things to help a firm grow: (1) sets
objective performance criteria, (2) provides subsidies, and (3) disciplines underperforming firms. Given that
internationalization could be regarded as a process of learning how to build capabilities to compete against foreign
firms (Weerawardena et al., 2007), it may be argued that just exerting discipline on latecomer firms probably will not
inspire a great deal of learning because latecomer firms, lacking requisite capabilities at this early stage, are told “what
to achieve” rather than are taught “how to achieve” (Chang, 1995; Fiol, 1996). Furthermore, Doner (1992) has found
that the requirement to cultivate the technical capabilities of latecomer firms is beyond the informational and
organizational capacities of the government.
Accordingly, this article speculates that public research institutes might play a key role at the stage of “getting there.”
As reviewed earlier, public research institutes, such as Taiwan’s Industrial Technology Research Institute, played an
important role in enhancing latecomer firms’ technological capabilities by facilitating their learning of existing, if not
outdated, technologies from the West. For example, in the early 1980s, with the help from Industrial Technology
Research Institute to transfer computer system production technology from Wang Computer of the United States, Acer
introduced the world’s second 80386-based computer before IBM did (Chang et al., 1999). United Microelectronics
Corporation built on the semiconductor technology, which Industrial Technology Research Institute transferred from
RCA of the United States, to develop Taiwan’s first homegrown 80486-chip microprocessor (Mathews and Cho,
2000).

**Proposition 2a.** At the stage of “getting there,” public research institutes would take care of the technological
capabilities of latecomer firms so that latecomer firms are more likely to be able to secure their positions in the
international market.

5.1.1. Exploitation-oriented learning
Following the above proposition, one might ask, “What kind of learning do public research institutes facilitate in
latecomer firms?” As suggested by James March (1991), one kind of organizational learning is exploration-oriented,
which involves innovation and experimentation. Due to its risk-taking nature, its return is unpredictable. The other is
exploitation-oriented learning, which involves incremental refinement, execution, and implementation. Due to its
efficient nature, its return is more certain and more speedy. Simply put, exploration is high-risk learning for the long
run, whereas exploitation is low-risk learning for the short run. Under the creative destruction brought on by large
monopolistic FMNEs, the growth of LMNEs arguably is a matter of finding a momentary safe spot in the international
market. If latecomer firms cannot survive in the short run, what is the point of taking a long-term approach?
A case in point is China’s Haier, the world fourth largest refrigerator manufacturer. In its formative years, based on
the outdated technology transferred from Germany, it introduced additional functions, such as washing vegetables, to
accommodate the lifestyle of low-income families in the rural areas. By doing so, it successfully found a niche for itself
in the fiercely competitive appliance industry (Anderson and Markides, 2007). Empirical studies on developing
countries also support the view that latecomer firms should undertake exploitation-oriented learning first. For example,
Amsden (1989) found that the growth of LMNEs in South Korea started with the exploitation of borrowed technology,
rather than the creation of new inventions. Porter (1990) also discovered that young latecomer firms in Singapore with
little product or process technology began by sourcing inexpensive and widely available technology from developed
countries. Hobday (1995) also observed similar growth patterns in Hong Kong and Taiwan.
The main benefit of exploitation-oriented learning is time compression (Cho et al., 1998). Latecomer firms would need
less time to build a plant than would their counterparts in developed countries, because they could capitalize on the
experience from the West. Furthermore, they could minimize R&D costs through imitation (Kim, 1997). In sum,
exploitation-oriented learning is less risky because latecomer firms have a model to follow, which accelerates their learning.

**Proposition 2b.** Public research institutes would take care of the technological capabilities of latecomer firms by
facilitating exploitation-oriented learning.

5.1.2. Comparative advantage
One might further ask, “On what basis could latecomer firms undertake exploitation-oriented learning?” This
question touches on a fundamental notion in international business: comparative advantage. When comparing
latecomer firms in developing countries to their counterparts in developed countries, one may discern two asymmetries (Chenery, 1961). The first is capability asymmetry. Latecomer firms in developing countries do not possess the necessary capabilities to interact directly with sophisticated consumers in developed countries, and, as a result, capability asymmetry puts them at a disadvantage. The second is cost asymmetry. Latecomer firms have substantial cost advantages in the areas of engineering, management, and raw material, which are the main elements of their comparative advantage. Thus, cost asymmetry puts them at an advantage.

Furthermore, Rumelt (1979), in challenging the basic assumption of resource symmetries underlying perfect competition theory, argued that firms should formulate strategies to exploit asymmetries that constitute an advantage in order to find a niche in the market. Due to the persistence of resource and capability asymmetries across firms in the short run (Lippman and Rumelt, 1982), it implies that latecomer firms should compete on their comparative cost advantage, carving out interstices to defend themselves in international markets by leveraging local assets and specializing in simple, low-value-added activities (Dawar and Frost, 1999; Penrose, 1959). In other words, latecomer firms should translate their “comparative advantage in resources” into their “marketplace position,” which may lead to superior financial performance vis-à-vis their international competitors (Hunt and Morgan, 1995). Although these above mentioned notions, taken individually, have been discussed by many scholars (e.g., Wright et al., 2005), this article arguably is the first to place them into an integrated framework with specific reference to the growth of latecomer firms.

When Samsung entered the international television market, for example, it purposely chose a low-end segment in the developed countries so that it could tap into South Korea’s abundant labor force to take advantage of cheap labor costs (Kim, 2007). TCL, China’s largest television manufacturer, showed the similar strategic pattern when entering North American and European market (Wu, 2005). Mathews and Cho’s (2000) finding also indicated that growth based on simply assembly was the initial strategy that Korean and Taiwanese latecomer firms used to enter North American information technology markets.

**Proposition 2c.** Latecomer firms’ exploitation-oriented learning would be based on their comparative advantage.

5.2. Staying there: the competition of the market

When latecomer firms gradually secure positions in the international market through exploitation-oriented learning with their comparative advantage, which sector should get involved? Let us first consider the state. Yet, scholars have cautioned against relations between the state and established firms, arguing that the bigger and more established a firm is, the more likely it would behave like a political entity rather than a business concern, and it would try to sustain itself through its political clout. In other words, big business would have a “corrosive institutional effect” on the public sector (Evans, 1998: 82), and as a result, the governmental institutions are very likely to be captured by some robber barons (Mintzberg, 1989). For example, Eun Mee Kim (1997) has documented that in South Korea, as chaebols grew, there was growing collusion (“shady deals”) between chaebols and governed officials, as indicated by a gradual reduction of the state’s intervention as well as the increasing symbiosis between big business and the state. Presumably, at this point, close government-business relations would facilitate corruption of the state on one hand, and conspiracy for unfair competition in the market on the other.

The above arguments point to the fact that it would be difficult for the state to maintain equilibrium between autonomy and embeddedness. Under the pressure of big business, there is a tendency for the state to over-embed itself in the economy and it thus is very likely to slide from embedded autonomy to crony capitalism. It leads to an argument that the state should play fewer roles at the stage of “staying there,” and therefore, the market might be the most appropriate player to bring to the table. The idea that competition should accompany the growth of latecomer firms suggests, through competition, those who survive may be the fittest and the strongest; moreover, through competition, latecomer firms could learn how to maintain their positions in the market without external help from the government.

**Proposition 3a.** At the stage of “staying there,” latecomer firms that are able to pass the test of market competition are more likely to become established in the international market.

5.2.1. Exploration-oriented learning

As mentioned earlier, at the stage of “getting there,” the growth of latecomer firms is a matter of finding a momentary safe spot in the international market. In contrast, it may be argued that at the stage of “staying there,” the growth of latecomer firms becomes a constant struggle for survival in the international market. Hayes and Abernathy (1980) once argued that in order to pass the test of international competition, perhaps firms need to take a long-term
approach and offer superior products. Schumpeter (1942: 80, 84) also maintained that in order to survive the “predatory or cutthroat competition,” firms need to grow by creating the “new commodity, the new technology, the new source of supply, the new type of organization”. Although these arguments are referring to western firms in developed economies, they are equally applicable to latecomer firms. Aggarwal and Agmon (1990: 176), in discussing latecomer firms’ growth strategy at the later stage of internationalization, suggest that LMNEs develop technologies “that is at par with the best in the world” in order to compete in the global market.

Otherwise, just as James March (1991) cautions, firms that indulge in exploitation eventually find their competitiveness compromised. In the context of international competition, as the foreign market sectors in which latecomer firms engage become more skill and capital intensive, their lower-cost comparative advantage may be nullified. Furthermore, as comparative advantage shifts among countries (Kogut, 1985), they would eventually lose their edge to their counterparts in other developing countries since no country could remain world’s low-cost producers permanently (Farrell et al., 2005).

In sum, the growth of latecomer firms in this stage “is less driven by cost factors per se,” than, among others, by a search “technological innovations to compete successfully in the global economy” (Yeung and Olds, 2000: 12). Some specific examples illustrate this point. South Korea’s Samsung Electronics reportedly deploys 34% of its total human resources in R&D related activities (Luo and Tung, 2007: 496). Automaker Hyundai built up numerous engineering labs in the United States (Eppinger and Chitkara, 2006). Latecomer firms from China also demonstrated their commitment to innovation by setting up overseas R&D centers. Galanz, the largest microwave oven manufacturer in the world, established its R&D center in the United States in 1997 (Ge and Ding, 2005). Huawei established a software development center in Bangalore (Business Week, 2003). Lenovo, Haier and ZTE also built up their own R&D centers in the United States and Japan (Xie and White, 2006). Other recent research on East Asian latecomer firms in the high-technology industries also shows the importance of exploration-oriented learning when latecomer firms move from the stage of technology users to that of technology generations (Choung et al., 2000; Kim, 1997; Hobday, 1995). Wright et al. (2005) found that the overall pattern of latecomer firms successfully entering developed economies involves putting emphasis on the innovation of the product and process.

Proposition 3b. At the stage of “staying there,” latecomer firms that engage in exploration-oriented learning to search for new products and/or new manufacturing processes are more likely to pass the test of international market competition.

5.2.2. Competitive advantage

As mentioned earlier, at the stage of “getting there,” latecomer firms rely on their comparative advantage to secure positions in international markets. However, this might not be the case at the stage of “staying there.” Scholars with a resource-based view have argued that in order to outperform their competitors, firms should accumulate resources and develop capabilities that are rare, valuable, not substitutable, and difficult to imitate (Barney, 1991). Such a view suggests that in order to survive international competition, latecomer firms need to create a new competitive advantage, rather than rely on their inherited comparative advantage.

Proposition 3c. Through exploration-oriented learning to create a competitive advantage, latecomer firms are more likely to be able to secure themselves in international markets.

5.3. The transition: the discipline of the state

As reviewed earlier, Amsden’s (1989) original work on the developmental state formalizes the concept of the state’s discipline and provides this article with the theoretical grounding for the consideration of a transition stage. In this market-augmenting paradigm, the state could provide a quasi-market arena for latecomer firms before they enter international markets. In an attempt to introduce greater efficiency, competition, and incentives for firm’s performance into this process, the government exercised substantial control through economic regulations and policies by purchasing services or goods from a variety of latecomer firms (Ferlie, 1992).

This process was sometimes politicized because the South Korean government was bribed and tended to bail out the firms managed by their close friends. Nevertheless, the state still tried to hold an attitude of cold-bloodedness toward business and declined to support bad-performing LMNEs. In contrast, the government in Brazil, which was plagued by its internal conflicts and divisions, was not able to exercise the similar disciplinary measure as its counterpart in South Korea did to push the local firms to grow into the desired directions, and unfortunately led to their disappointing performances (Evans and Tigre, 1989).
**Proposition 4a.** The state could exercise discipline over latecomer firms and provide them with a quasi-market environment before they enter international markets.

In addition to providing a quasi-market, it is speculated in this paper that through its discipline, the state might also help overcome two growth traps that latecomer firms tend to encounter: the comparative advantage trap and learning myopia.

### 5.3.1. Low-cost comparative advantage trap

By low-cost comparative advantage trap, this paper means the tendency for latecomer firms to base their growth solely on the cost advantage, with no intent to move beyond that. Calling for a revolution against capitalists, Marx and Engels (1848; 1988: 86) once argued, “the proletarians have nothing to lose but their chains”; in the context of competing with FMNEs, this suggests that in pursuing competitive advantage in international markets, LMNEs have nothing to lose but their cost advantage; yet, this is not something they want to lose. However, with only few exceptions (Porter, 1990; Lall, 1992; Park, 2004), this issue has not received much attention in the international management literature. Most scholars have highlighted the upside of comparative advantage since David Ricardo first introduced this notion in the early nineteenth-century in the U.K.; few scholars have been aware of the potential downside of this idea in their research agendas.

Under the pressure of international competition, latecomer firms tend to play exclusively to their comparative advantage in international markets; yet, in doing so, they encounter few opportunities to develop new capabilities. Eventually, they will find themselves locked into their comparative advantage, armed only with cheap labor or natural resources, and specialized in activities that do not permit growth in the long run (Park, 2004; Lall, 1992). Accordingly, in *The Competitive Advantage of Nations*, Porter (199: 675) warns that “the central task facing developing countries is to escape from the straitjacket of factor-driven... [comparative] advantage”. Hence it is reasonable to argue that the key to growth for latecomer firms in the transition stage is to overcome the comparative advantage trap, climbing up the economic value chain to high-value-added activities from low-value-added ones in which they engage at the stage of “getting there.” This leads to the premise that, in order to create competitive advantages, latecomer firms need to abandon their previous comparative advantage.

The state might be needed to help latecomer firms switch their growth basis from comparative advantage to competitive advantage. Instead of encouraging latecomer firms to further exploit their comparative advantage, the state should formulate policies to develop the capacity of latecomer firms for greater competitive advantage (Lall, 1992; Park, 2004). Ideally, the state should put a certain amount of pressure on latecomer firms in order to push them to achieve a stronger competitive edge. For example, the state could withdraw its financial aid from latecomer firms that overly rely on comparative advantage. This argument is in line with the view of Aggarwal and Agmon (1990: 177) that the government should “promote and help” latecomer firms’ competitiveness in this process.

Take China for instance. At the beginning of the 1990s, the Chinese government encouraged local firms to “Go Global” (Cai, 1999). In order to facilitate local firms to invest overseas, Chinese government signed bilateral investment treaties with 103 countries and double taxation treaties with 68 countries (Wu, 2005). The government also provided LMNEs with preferential credit and other incentives (UNCTAD, 2006), as exemplified by the case of Lenovo’s acquisition of IBM personal computer division that received financial aids from the government (Business Week, 2004). The government also offered Huawei a $10 billion low-cost loan to help it explore international market (Kurlantzick, 2006). In return, those LMNEs were required by Chinese government to achieve one of four goals: advanced technology transfer, raw material access, foreign exchange earnings, and export expansion (Deng, 2004). The development of India’s information industry also showed the similar pattern. To encourage potential information technology LMNEs to go to international markets, India’s government simplified the onerous export procedures, and lowered duties on imported software and hardware that were much needed by local firms (Evans, 1992).

**Proposition 4b.** Under the discipline of the state, latecomer firms are more likely to be able to escape the comparative advantage trap.

### 5.3.2. Learning myopia

The other significant growth trap is learning myopia, which refers to the fact that firms forfeit exploration-oriented learning for exploitation-oriented learning (Levinthal and March, 1993). When undertaking organizational learning, latecomer firms normally prefer the short-term virtue of exploitation to the seemingly fruitless effort of exploration. At a certain point, LMNEs often lose interest in maintaining adequate, if any, exploration. However, a learning process dominated by exploitation is “potentially self-destructive” (March, 1991: 85). For example, studies show that reliance
on transferred technology can lead to dependency and passivity, leaving firms vulnerable to potential imitators (Rosenberg, 1976; Kogut and Zander, 1992).

Another factor that discouraged latecomer firms to undertake exploration is market failure. For latecomer firms to invest in exploration-oriented R&D, it would expect that it could appropriate solely the profits without other firms free riding on it (Levin et al., 1987). The appropriation of R&D profits is not secured whenever externalities of innovation occur; and the profits of innovation will spill over the boundary of firm and thus become public (Nelson, 1992). Therefore, in the developing countries where pirating is rampant, the willingness of LMNEs to explore new product areas, particularly the technological risk-taking ones, is not comparable to that of FMNEs.

Hence, the growth of latecomer firms in the transition stage is also a matter of overcoming learning myopia. Latecomer firms should move from exploitation-oriented learning to exploration-oriented learning to create a firm-specific competitive advantage. In order to cure learning myopia, state could promote research and development by bestowing rewards on latecomer firms that have created competitive advantage derived from successful exploration-oriented learning (Levinthal and March, 1993). The state could also withdraw its financial aid from latecomer firms that engage in exploiting existing technology to the exclusion of exploring new product and process. Those firms are not worthy of supporting because the state will eventually find them “trapped in suboptimal stable equilibria” (March, 1991: 71).

Taiwan’s experience could exemplify the above theoretical reasoning. To upgrade the development of technology-intensive industry, the Hsinchu Science Park was established by the Taiwanese government in 1980. To be located in the Hsinchu Science Park, firms were required by the government to spend a certain proportion of their revenues on R&D, and a certain percentage of their employees must be scientists and engineers. Once permitted to operate in the park, the land rent was zero for firms and preferential loans, tax reduction, administration services and other incentives were granted (Gwynne, 1993).

**Proposition 4c. Under the discipline of the state, latecomer firms are more likely to be able to overcome the learning myopia.**

In summary, the growth trajectories of latecomer firms are embedded in their social, political and economic environment. The social sector, the state, and the market played varying roles in influencing LMNEs’ technological capabilities in three growth stages. It should be noted that each sector seems to be more germane at each stage and it is somewhat arbitrary to distinguish these stages, which may overlap with others. As a preliminary effort to integrate the theories of economic development and dynamic capabilities, this paper focuses only on the independent effects of the three sectors on the internationalization process of latecomer firms. Propositions regarding the division of labor are graphically illustrated in Fig. 2.

6. Discussion

6.1. Contributions

This article has examined how LMNEs could establish themselves in the international market through the balanced influence of the three sectors. It posits a break from the existing international management literature in terms of how one could conceive of LMNEs and how one could theorize the rise of LMNEs in the global economy. Instead of either ignoring LMNEs or treating them as passive, docile objects, this paper highlights the LMNEs and regards them as active subjects in the global marketplace. Furthermore, instead of researching cross-sectional characteristics of FMNEs, this paper, by drawing on the important, but often ignored, economic development literature, emphasizes the longitudinal process of how LMNEs develop capabilities.

Specifically, this paper attempts to answer a central question in international business research: “What determines the international success and failure of firms?” (Peng, 2004).

First, in explicating LMNEs’ success, it focuses on their exploitation-oriented and exploration-oriented learning to integrate two important notions: comparative advantage and competitive advantage. Second, it explains and predicts two growth failures, comparative advantage trap and learning myopia, which are previously speculated about, but not specified.

6.2. Research limitations

There are two principle limitations to theoretical development in this paper. First, it does not deal with the fact that LMNEs form strategic alliances and M&As with and of FMNEs to enhance their capabilities. Zhou and Xin (2003), for
example, have documented more and more LMNEs in China forming strategic alliances with FMNEs to boost their capacity. Yet, some scholars have cautioned against building close ties with FMNEs, arguing that LMNEs should independently fortify their distinctive resources instead of trading their autonomy for externally installed capabilities (Dawar and Frost, 1999; Bartlett and Ghoshal, 2000).

Second, this paper does not incorporate national culture to develop the model. Since Hofstede (1980) published *Culture’s Consequences*, national culture has been one of the most important and dominating concepts in the literature of international management. Scholars have tried to explain the influence of national culture on, for example, international alliance formation (Steensma et al., 2000), entry mode (Kogut and Singh, 1988), and technology transfer across nations (Kedia and Bhagat, 1988). However, as suggested by Earley and Singh (1995) in the introduction of a special forum on international and intercultural management in the *Academy of Management Journal*, international research does not necessarily have to focus on cultural values.

6.3. Research implications

This paper has several research implications. First, in contrast to international entrepreneurship scholars who advocated for firms to internationalize their operations from their inception (Oviatt and McDougall, 1994; Etemad, 2004), it warns against latecomer firms plunging into international competition at an early stage. While the increasing presence of new international ventures is a significant phenomenon in developed economies and is worth more research, it is found that the majority of new Western international ventures lack capabilities to compete and had more problems than did mature ones in the global market battlefield, the main characteristics of which are cross-subsidization and retaliation (Vozikis and Mescon, 1985; Hamel and Prahalad, 1985). Hence, this paper suggests that international entrepreneurship might not be a viable avenue for research and practice for LMNEs in developing economies.

Second, this paper points to the necessity for the state and social sector, two important national institutions that lie within national borders, to play an active role in developing the capacity of LMNEs. It is true that due to the free flow of people, ideas, information, and capital across borders, globalization has undermined the functions of national institutions, (Vernon, 1971; Ohmae, 1999), and as national economies become more global, few domestic decisions could be made without the intrusion of international rules (Ostry and Nelson, 1995). However, the model in this paper suggests that the more market becomes global, in order for LMNEs to survive in the international competition, the more important national institutions will become, because before LMNEs could wage war against FMNEs, nascent LMNEs would need the caring hand of the social sector and the discipline of the state.
Third, though some scholars argued that, judging from the changing relations between FMNEs and their local customers, the end of corporate imperialism is near in sight, this article nonetheless contrasts the vulnerability of LMNEs to the ravaging nature of FMNEs in the international market. While FMNEs have made an effort to apply the doctrine of domicile and tried to be good corporate citizens in order to gain legitimacy in developing countries (Prahalad and Lieberthal, 1998; Kostova and Zaheer, 1999), however, in light of dyad relations between FMNEs and LMNEs, it is reported that FMNEs sometimes have abused monopoly power in royalty payments (Dahlman et al., 1987), and, as a result, the relations between LMNEs and their FMNE partners tend to be hierarchical and exploitative (Zhou and Xin, 2003). This implies that corporate imperialism might not end until LMNEs have formed a formidable countervailing power against FMNEs in international competition.

6.4. Practical implications

A number of implications for public and business policies emerge. A critical insight for policy makers is the transient nature of the government’s role in disciplining LMNEs. Simply following the recipes of developmental state theories probably is not enough (e.g., Amsden, 1989; Evans, 1995), because policy makers need to know when it is most effective to lend a hand, especially when LMNEs need a push from the government to overcome the two growth traps. Once LMNEs are established, policy makers, regardless of the pressure from the interest groups, also need to know when to pull out of the picture to let the market open for international competition.

Managers of LMNEs are engaging in a David-Goliath battle with FMNEs in the international market; yet, unfortunately, as Dawar and Frost (1999: 120) noted, they have had few guidelines for competition. The inapplicability of most international management theories in part is due to their “Outside-In” approach, while managers from emerging economies need new tools to get “inside out.” This paper suggests that the key task for LMNEs is to draw on the strength of the three sectors when possible (i.e., caring, discipline and competition). In other words, LMNEs should try to work closely with the public research institutes of the social sector, be willing to accept the discipline from the state, and, finally, be willing to confront the fierce competition in the international market on their own. LMNEs that rely too much on public research institutes for technology sources, that hide behind government protectionism, and that are paralyzed by viewing themselves as second-class citizens, and, thus, have no strategic intent to fight competition, are likely to fail and to be wiped out by FMNEs in the market (Bartlett and Ghoshal, 2000; Hamel and Prahalad, 1989).

6.5. Future research directions

A number of future research directions are suggested. First, given that the unit of analysis in this paper is the firm, future research might shift to other levels of analysis. For example, Aggarwal (1984) has extended Vernon’s (1966) model to explain the evolution of LMNEs by focusing on the level of products. Given that how LMNEs convert their accumulated capability into a product is less well known, researchers in the future may need to explore how LMNEs launch innovative products to build their brand image in order to overcome the liability of origin in international markets (Bartlett and Ghoshal, 2000). Another issue worth exploring is how organizational capabilities influence LMNEs’ choice of entry mode into developed countries. The ideas employed here, especially exploration-oriented and exploitation-oriented learning, can serve as a basis for such future theoretical development (Yip, 1982; Chang and Rosenzweig, 2001; Barkema et al., 1996).

Finally, this article mainly draws on the dynamic capability perspective to depict the growth trajectory of LMNEs. Even though dynamic capability theories are clearly important (e.g., Collis, 1991), they are not the only ones to explore. It is likely that transaction cost theories (e.g., Buckley and Casson, 1976; Hill et al., 1990; Rugman and Verbeke, 2003) and oligopolistic competition theories (e.g., Hymer, 1976; Kindleberger, 1969; Caves, 1996) could also help understand the growth process of LMNEs.

6.6. Conclusion

This paper believes that the phenomenon of LMNEs has considerable potential as an area of future research. There is a need for longitudinal studies on the growth of LMNEs and a more detailed examination of various aspects of the phenomenon. For example, as mentioned earlier, it would be interesting to explore how LMNEs convert capabilities into products in the market and how capabilities influence how they choose their entry mode into developed
economies. Finally, there may also be important theoretical implications for the concepts developed here, both in the area of economic development and international strategic management. It is hoped that this article could provide a grounding of theoretical perspectives and a framework of ideas, around which subsequent studies can be built.

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