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Chinese Multinational Enterprises' Firm-specific Advantages and a Critic on the International Business Theory

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Competitive Paper

Abstract

We argue that the extant literature tends to view that EMNEs do not have FSAs and in particular, innovation-based ownership advantages. This, however, is not a fact but a myth that deserves detailed examination. Drawing on a case study of four Chinese multinationals, we argue that some Chinese multinationals have brilliant innovation capabilities particularly in areas such as services-based innovation, architectural innovation and grafting innovation. This helps to explain their rapid rise and internationalisation. We therefore argue that Dunning's OLI paradigm is still relevant in the context of EMNEs. However we also accept that the OLI paradigm needs to be taken with a complementary view that EMNEs also internationalise to augment their assets/capabilities. We call for further studies on EMNEs' FSAs with a broader view of innovation.

Chinese Multinational Enterprises' Firm-specific Advantages and a Critic on the International Business Theory

1. THE RISE OF EMNEs AND THEIR OFDI/INTERNATIONALISATION

Scholars have traditionally regarded multinationals as an invention of Western economies. But with the rapid development of a multi-polar world, they are no longer exclusive to the West (Matthews, 2002; Ramamurti, 2009a). In fact, rapidly growing emerging market economies such as the increasingly affluent BRIC (Brazil, Russia, India and China) countries are now producing home-grown MNEs at a phenomenal rate (Accenture, 2007; Boston Consulting Group, 2011).

The rise of the EMNEs has been accompanied by an unparalleled increase in outward foreign direct investment (OFDI) from emerging economies, which has risen rapidly from insignificant levels to reach a total value of USD350 billion by 2008 (UNCTAD, 2009). EMNEs from the BRIC countries have been in the vanguard of this development (Gammeltoft et al 2010b), led by China in particular, whose OFDI has become increasingly important to the global economy since the beginning of this century.

Taken together, the rise of the EMNEs and their increasing contribution to global OFDI flows appears to have major potential for disrupting the current paradigm of global competition and for challenging traditional scholarly thinking on international business. While many EMNEs share the scale and ambition of their more established Western counterparts, the factors driving their multinational development and rise to global prominence are frequently different from those of the developed market multinationals (or DMNEs). Some commentators therefore see them not only as being increasingly able to change the 'rules of the [global competitive] game' (Zeng and Williamson 2007), but also as necessitating serious reconsideration of existing international business (IB) theory (Niosi and Tschang, 2009).

2. RECENT DEBATES ON THE IB THEORY AND THEIR LIMITATIONS IN LIGHT OF EMNEs

2.1 Recent debates on the IB theory

The perceived rise of EMNEs has generated an intensive debate on the IB theory recently. Many scholars argue that Dunning's OLI paradigm should be used to explain the emergence

and OFDI activities of EMNEs (Dunning, 2006; Narula, 2006; Rugman, 2009). Others conclude that any foreign investments by EMNEs will be inadvisable, unless they have been able to develop true firm-specific advantages (FSAs) based on technological innovation and strong, internationally recognisable strong brands (Rugman and Li, 2007). Some (Cuervo-Cazurra and Genc, 2008; Ramamurti, 2009; Lessard and Lucea, 2009) in contrast argue that Dunning's paradigm must be extended in the light of the fact that EMNEs build unconventional types of FSAs not considered by mainstream international business theorists. Another group believe, however, that the OLI paradigm is not relevant in the context of EMNEs as they do not have ownership advantages (Mathews, 2006). It is clear that the debate centres on whether EMNEs have FSAs and, if they have any, what FSAs they have. The following discussion reviews the recent debate according to scholar's stances on EMNEs' FSAs and the need of new IB theory.

View A, EMNEs have no FSAs and they actually suffer from ownership disadvantages

The first of the leading positions in this debate is occupied by a group of scholars (such as Mathews, 2002; Luo and Tung, 2007) who argue that EMNEs may internationalise in order to obtain the ownership advantages that they lack. Advocates of this view argue that such behaviour cannot be accounted for by the existing international business theories (Dunning (1988a, 1995, 2000), which were developed only with the analysis of DMNEs in mind, with the result that new theoretical development is now needed. This must accommodate the problem that EMNEs (at least initially) lack FSAs, contributing to ownership disadvantages associated with their latecomer status, which asset augmenting OFDI in developed countries can help to overcome (Ramamurti, 2012). Such behaviour cannot be readily explained by conventional international business theories, since these are premised on the assumption that firms already possess ownership advantages before undertaking multinational development (Mathews, 2002). New theories or frameworks are therefore required, in order to explain the rapid rise and the growing geographical spread of EMNEs and their asset-augmenting OFDI in developed countries and regions.

Mathews (2006) has made a leading contribution to the development of this view, by arguing that EMNEs fall into a set of 'second-wave' international players, following a pattern of accelerated international development that requires new explanatory theory. He therefore puts forward a new theoretical (linkage, leveraging and learning, LLL hereafter) framework,

predicated on the belief that international expansion by latecomer EMNEs is typically driven by the desire to overcome ownership disadvantages and to build their FSAs, involving connection and networking with international partners, followed by upgrading via a process of iteration and improvement. Guillen and Garcia-Canal (2009) also suggest that EMNEs follow a pattern of accelerated internationalisation, using alliances and acquisitions to expand abroad, in order to add to their (initially weak) competitive advantages. Luo and Tung (2007) go on to set out a springboard perspective, whereby EMNEs undertake OFDI in order to acquire the FSAs that they need to compete against DMNEs, making use of international expansion as a ‘springboard’ helping them to overcome their latecomer and competitive disadvantages in their home and key global markets.

View B. EMNEs have few FSAs and there is no need for new theory.

A second set of scholars argue that EMNEs possess few ownership or FSAs, but they enjoy some country-specific advantages (CSAs) such as economies of scale. Rugman (2008a: p.97) for example argues that ‘the Chinese firms are protected, resource-based, labour-intensive, low-technology and inefficient firms. ...Basically there are no Chinese TNCs; there are just Chinese home firms’. He also goes on to claim (Rugman, 2008b, p17) that ‘MNEs from emerging markets tend to lack advanced managerial skills in internal knowledge generation and in the systems integration required to develop FSAs across a network of subsidiaries. Instead, these MNEs at best enjoy economies of scale based on home country CSAs in cheap labour (even cheap skilled labour as in India’s case), natural resources and/or possibly cheap money (as in China’s case).’ Dunning et al (2008: p177) argue similarly that “...unlike yesterday’s developed-country TNCs, today’s emerging-market TNCs rarely have the firm-specific advantages (notably organisational and management skills) to ensure success in their outward FDI. What they do appear to have is a variety of home-country-specific advantages that they are able to internalise and use outside their national boundaries.”

Summing up the implications of these views, these scholars therefore conclude that EMNEs’ rapid multinational development and OFDI behaviour can also be explained in terms of the exploitation of home country-based CSAs, such as low-cost labour, finance or natural resources, rather FSAs (Rugman, 2009). It follows that ‘no new theory is needed to explain CSAs and the resulting FSAs in economies of scale’ enjoyed by many EMNEs’ (Rugman, 2008b, p17). Dunning’s (1988a, 1995, 2000) long established, eclectic (OLI) paradigm is still

the most useful tool that international business scholars possess for the study of EMNEs. Indeed, Dunning (1981) and Dunning and Lundan (2008) suggest that the OLI paradigm could be extended with a subdivision of the originally conceived ‘ownership advantages’ into three elements, centred respectively on their ownership of intangible assets, transactional advantages and institutional advantages. They argue that EMNEs can make use of their superior knowledge and understanding of domestic institutions to reduce the transaction costs involved in their cross-border operations, thus providing them with a non-FSA related advantage that may help them with their continuing multinational development.

Some scholars argue that many EMNEs are at an earlier stage in their multinational development than most DMNEs (Dunning et al, 2008; Ramamurti, 2009a). They therefore lack ownership advantages or FSAs comparable to those enjoyed by their more established competitors, although this reflects their status as latecomer MNEs rather than any country of origin related factors. Most will, as a result, rely in the short to medium term on their CSAs, the acquisition of FSAs through asset-augmenting OFDI, and the modification of technologies and products to suit emerging market and developing country conditions in their search for competitive advantage (Ramamurti, 2009b; Cuervo-Cazurra, 2012). Given time, however, they can be expected to supplement and upgrade their ownership advantages and therefore to become more similar to DMNEs (Lessard and Lucea, 2009). Once this process is completed, the observable differences between EMNEs and DMNEs are likely to disappear (Ramamurti, 2008a; Narula, 2012; Malik and Aggarwal, 2012).

View C. EMNEs have unique and CSAs-derived FSAs which either necessitate a different theory or an extension of the existing theory

The final scholarly perspective is predicated upon the view that EMNEs do possess ownership advantages, but that these are derived from their distinctive CSAs. As a result, they are quite different from the ones suggested by most conventional international business theorists in the DMNE context (Ramamurti, 2009a). It is argued from this standpoint that EMNEs draw typically not so much on the innovative products and global brands mentioned in the DMNE literature, but rather on the possession of other advantages grounded in their history of operation and strategic development in emerging markets such as China. These advantages may take a variety of forms, including their ability to deal effectively with opaque political, legal and business environments (Buckley et al, 2008; Morck et al, 2008), their

monopoly access to local resources (Hennart, 2012) and their superior access to key institutions (Cuervo-Cazurra, 2008), networks and relational assets (Manolova et al, 2010; Erdener and Shapiro, 2005, Yiu et al., 2007). They can also benefit from their unique understanding of emerging market customer needs, their ability to supply products and services at very low costs, and their capacity to develop stripped down products embodying the optimal quality- price mix for their home customers (Kumar and Chadha, 2009; Guillen and Garcia-Canal, 2009; Ramamurti, 2009a; Govindarajan and Ramamurti, 2011). Some of these FSAs may depend on EMNEs particular countries of origin, whilst others are likely to be available generically to all EMNEs (Amighini et al 2009).

2.2 problems with recent contributions

Problems with view A:

Each of the theoretical perspectives set out above carries attendant difficulties, however, in terms of explaining the multinational development, FSAs and OFDI behaviour of EMNEs. With regard to the first of these perspectives, it can be argued that the pursuit of asset-augmenting OFDI by EMNEs should not be taken to exclude the possibility that they already possess ownership advantages. Ramamurti (2012 : p42) lends support to this view, arguing that “....while there is considerable evidence that EMNEs venture abroad in search of valuable technologies or brands, it is quite another thing to argue that they so without ownership advantages ex ante.”

The second problem view A has is that asset-augmenting OFDI also implies that EMNEs must have ‘existing ownership advantages’ since ‘they must first master the capabilities to absorb them’ (UNCTAD, 2009: P.162). Dunning himself insists that MNEs must ‘possess some unique and sustainable resources, capabilities or favoured access to markets, which, if they choose to engage in asset augmenting foreign direct investment, they might expect to protect or augment’ (Dunning 2006: 139).

The third problem is that, if EMNEs do not have FSAs and suffer from ownership disadvantages, then it is difficult to ‘explain how firms that are going abroad to learn can, at the same time, successfully compete with their teachers’ (Hennart, 2012: p.171). It is clear some EMNEs do so successfully, for example Haier (Child and Rodrigues 2005), Huawei

and Lenovo (Clark and Thompson, 2007) and many global challengers from other emerging economies (Boston Consulting Group, 2011).

Problems with views B:

The second scholarly perspectives emphasise the role of CSAs in EMNEs' internationalisation. However, possession of CSAs by these MNEs should not be taken to equate with the argument that they lack FSAs. Many Chinese MNEs have, for instance now enjoyed two to three decades of very fast growth levels, despite fierce competition from domestic and foreign rivals (Matthews, 2006). It can be argued that their rapid internationalisation, multinational development and their OFDI activities can be seen as being indicative of their organisational and management skills. Moreover, it is difficult to defend the view that EMNEs enjoy unique access to particular CSAs. Some of their alleged cost advantages are also enjoyed by DMNEs that undertake direct investment in emerging market countries. Many DMNEs also benefit from favourable treatment by developing countries, for example preferential tax breaks.

It can also be argued that the modifications of ownership advantages within Dunning's OLI framework has led to mixed results, as far as the accommodation of EMNEs within its parameters are concerned (Eden and Dai, 2010). Hennart (2012: 171) for example, takes the view that the addition of transactional advantages may not, of itself add much to the robustness of the framework, or its ability to explain the rise and multinational development of these new global competitive challengers, since 'it is a purely tautological fix [that] ...ends up predicting that a firm will internalize when there are benefits to internalizing'.

Lastly, much of the extant analysis of Chinese MNEs, usually drawing upon data from the Fortune Global 500, may not reflect the broadest possible picture, in that they are based on a particular group of Chinese MNEs, comprised largely of state owned enterprises (SOEs), neglecting a more dynamic group of private sector, entrepreneurially focused Chinese MNEs. Very often they reach a similar conclusion that the Chinese giants are not innovative and competitive and that their advantages lie with their monopoly position in the protected home market (e.g. Rugman's 2008a and b, and 2009). This is a biased view, however, because other sources, for example the Boston Consulting Group 100 Global Challengers and the

Private Enterprise 500 produced by the All-China Federation of Industry & Commerce, would reveal another group of Chinese firms who are more dynamic.

Problems with view C:

View C proposed a number of possible CSAs-derived FSAs owned by EMNEs. Some of these CSAs-derived FSAs, however, can be seen as limited or even disadvantageous to EMNEs in some circumstances (which are, however, often ignored by scholars). The widely assumed cost advantages, for example, are likely to disappear as labour costs rise in emerging market countries such as China (Buckley, 2007). In addition, EMNEs' institutional assets can also turn against them. For instance, it is argued 'China's distinctive cultural and institutional legacy' can 'increase the liability of foreignness' as Chinese firms try to internationalise precisely because of their tendency 'to rely on close personal relationships in business transaction (Child and Rodrigues, 2005: p385). Strong relationships with national governments can also constitute a two edged sword (Peng, 2012), having the potential to disadvantage EMNEs, for example where the state intervenes to restrict their commercial freedom, or where the entrepreneurially active leaders of SOEs in the process of multinational development are removed (Child and Rodrigues, 2005)

In addition,

It is also helpful to point out that FSAs derived from CSAs may only lead to the existence of location bound ownership advantages which enable MNEs to 'generate profits, but only in a specific location, or, to an extent, in similar locations' (Narula 2012: 191). It is argued, for example, the value of home country-based institutional assets is likely to be limited knowledge of institutions in home country may not be applicable to other seemingly similar but different environment and therefore there is a need to separate MNEs 'knowledge of similar institutions' from their 'knowledge of specific institutions' (Narula, 2012: p. 191). Similarly, the belief that EMNEs' monopoly access to local resources helps their internationalisation should be taken cautiously as again this is not a transferrable ownership advantages and many of EMNEs do not have it to start with anyway.

In summary, it can be argued that recent debates on the IB theory have an excessive emphasis on EMNEs' CSAs. The limited discussion on their FSAs assumes they are CSAs derived and not transferrable. It seems that scholars are too happy to accept EMNEs do not have FSAs.

This makes it still difficult to explain: a, why some EMNEs are competing successfully with the incumbents, not only in their home markets but also beyond; b, many EMNEs have both asset-exploring and asset-augmenting FDIs.

3. CHINESE MNEs AND THEIR FIRM-SPECIFIC ADVANTAGES

It is clear that the extant literature on EMNEs' ownership advantages tends to focus on their country-specific advantages. It is a pity that scholars tend to assume that EMNEs do not have core ownership advantages such as innovation capabilities without examining the situation in detail. This is partly because of the prevailing view that innovation equals to ground-breaking technologies. However, as Bhidé (2009) convincingly argue, innovation is a complex process involving advancement in high-level general principles, midlevel technologies, and ground-level, context-specific rules of thumb, all three playing necessary and complementary roles. It is therefore not helpful, when talking about innovation, to purely focus on the high-level ground-breaking technologies as low-level innovations are equally important.

It is this more holistic view of innovation that prompts us to re-examine Chinese firms' core FSAs and innovation-based FSAs in particular. We focus on innovation because this is widely viewed as the core ownership advantage that MNEs must master and it is widely assumed that Chinese MNEs, and EMNEs in general, do not have it. We believe this deserves further investigation because, in the discussion of EMNEs' innovation capabilities, scholars tend to focus on the high-level ground-breaking technologies but ignore the importance of the necessary 'low-level' innovations.

In order to identify the Chinese firms' possible innovation capabilities, discussion in this section is based on a case study of 4 Chinese MNEs who, in turn, are selected from the 20 biggest Chinese R&D spenders according to data from the UK Department of Business, Innovation and Skill (BIS). The aim is identify these Chinese MNEs' innovation capabilities as a way to identify their core FSAs, collecting data from these companies' annual report and information on their website, academic research on these companies, and mainstream newspaper report in both Chinese and English.

3.1 selected Chinese MNEs and their internationalisation

BYD was established in 1995 and chose to enter the rechargeable nickel-based (nickel-cadmium, NiCd) battery industry with little capital. Responding flexibly and quickly to changing demand in the cell phone batteries industry, the company had emerged by the end of 2002 as the world's largest producer of NiCd batteries and an important player in the NiMH and Li-ion battery markets. It is today the largest supplier of rechargeable batteries. BYD has also applied its new battery production technology to other industries such as automotives and alternative energy, reflected in its launch, in 2008 of the world's first commercial plug-in hybrid electric vehicle not needing a professional charging station. Later business expansion has seen the company penetrating into the green energy market.

The company started its internationalisation process towards the end of the 1990s and now has offices in the United States, America, Europe, Japan, South Korea, India, Taiwan, Hong Kong and other regions. In 2012 BYD sold its electric bus to Netherland and in the same year announced that it was to manufacturing electric bus in both Bulgaria and the U.S. In 2011, the company has 14.9% of its turnover coming from regions outside the Great China area.

Sany Heavy Industry was established in 1989 as a small welding material factory, but rose rapidly by the end of 2011 to become the world's sixth largest construction equipment manufacturer in sales revenue terms. In China *Sany* has built an industry reputation of being a fearless innovator. Its innovations have included the development the world's first fully hydraulic motor grader, and the world's largest crawler crane, together with an 86-meter truck-mounted concrete pump (breaking its own world record and demonstrating its leadership in concrete pumping technology). These innovations have led to impressive commercial growth, taking *Sany's* revenue from 100m RMB in 1993 to 50bn RMB in 2011.

Sany has accelerated its internationalisation in the last few years. Over the last 5 years the company has invested over USD \$1 billion overseas and now has offices in more than 100 countries across the world. In 2006, the company launched its first overseas manufacturing plant in India and since then another four in America in 2007, Germany in 2009, Brazil in 2010, and Indonesia in 2011 respectively. Particularly worth noting is its €100m investment in an assembly plant and R&D centre in Bedburg, Germany in 2009 which represents the biggest Chinese corporate investment in Europe until 2012. Also eye-catching is its

acquisition of German manufacturer Putzmeister in 2012 which solidifies the company's position as world's largest concrete machinery manufacturer. Later in the same year the company announced its joint ventures in both Austria and China with Palfinger - the market leader of knuckle boom cranes.

China South Locomotive is a state-controlled company that designs, engineers and produces electric locomotives for China's high-speed railway network. It is one of the largest rolling stock manufacturer in China and increasingly influential in the world market. China South possesses an extensive research capability enabling it to develop a high-speed EMU in 2002 that could run at 200 km/hour. In 2004, the company collaborated with *Bombardier* and *Kawasaki Heavy Industries* to jointly design and manufacture 100 high-speed electric multi units (EMUs) that would run at 250km/hour for China's railway system. Within a short time, the company was able itself to design, engineer and produce EMUs that ran at a speed of 350 km/ hour. In December 2010, its CRH380A EMU set a world record of 486 km/hour in trial operation. The company has also developed and strengthened its core technological capabilities in engineering and producing high-speed EMUs, particularly in the areas of propulsion and controls. For example, in 2010 the company developed an EMU convertor with the highest single unit power in the world which helped to propel the CRH380A.

As with BYD and Sany, China South Locomotive also accelerated its internationalisation in recent years. It only recorded overseas revenue of \$59m in 2001. This, however, quickly jumped to \$1bn in 2011. In the first half of 2012, its overseas revenue doubled the same period a year ago and represents 11.3% of its total revenue. China South Locomotive has established R&D centres in the UK and USA respectively, with the former achieved by acquiring a local company. The company has plans to build manufacturing facilities in both Turkey and Malaysia in the near future.

Huawei is widely seen as China's brightest technology star. Founded in 1986, the company has emerged to become a world's leading telecom solutions provider with annual sales of US \$32 billion in 2011. The company has to date been awarded 23,522 patents, 90% of which are for invention purposes. With a 'continuous customer-centric' approach to innovation approach, *Huawei* has developed considerable strengths in wireline, wireless and IP technologies. The company is at the forefront of LTE development (the standard for fourth-

generation (4G) wireless networks), based on its leadership of related technologies and its understanding of customers' needs, enabling it to win half of world's commercial LTE deployment contracts by 2011.

Huawei also started its internationalisation towards the end of the 1990s, initially in neighbouring Asian countries, but immediately afterwards in Africa, the Middle East, Latin America, North America and Europe. In 2005, its international contract orders have already exceeded domestic ones. In 2011, nearly 70% of its revenue came from overseas markets. The company is now deploying its products and solutions in over 140 countries, while also serving 45 of the world's top 50 telecom operators. Huawei established its first overseas R&D centre in Bangalore, India in 1999 and now has a total of 22 overseas R&D centres including 10 in Europe, 9 in North America, 2 in Asia Pacific and 1 in South Africa.

3.2 What are their FSAs?

Doubt has been cast, as noted earlier regarding the ability of Chinese companies to develop knowledge-based firm-specific competitive advantages, rather than merely drawing on the country-based low production cost advantages enjoyed by many EMNEs (Rugman and Li, 2007). Here we use the case study findings to examine whether the sample companies have accumulated any firm-specific advantages that help to explain their success and rapid internationalisation, drawing on data taken from examples of their innovations.

Market-driven and services-inclusive innovation

The success of these Chinese MNEs can be said to stem from their highly developed capacity to produce and market products that meet customer needs. *Sany* and *Huawei*, for example, place considerable emphasis on creating value for customers and providing an integral solution package for them. In its early years, *Sany's* concrete machinery products were inferior in quality and durability to those of leading foreign brands, yet it developed a competitive advantage in customer services, based on far faster and cheaper after sales service, enabling it to attract many customers within China and overseas. *Sany* has recently reinforced this advantage by launching an Enterprise Control Centre (ECC), allowing it to identify the location of each product sold, monitor its status, and provide tailored and timely services where needed, supported by periodic inspection training for customers.

Many of *Huawei's* innovations also reflect their highly developed understanding of customers' needs, reflecting the company's market-, rather than technology-driven approach towards innovation. Many telecom operators face a challenge, based on the rapid growth in demand for faster networks (such as LTE) to support mobile broadband and data traffic, while traditional technologies (such as GSM and UMTS) are still able to meet the needs of most mobile subscribers. One solution to this problem would be to provide operators with multiple networks, leading to the need for repeated equipment investment, site upgrading, and maintenance. *Huawei*, however, sought to provide a better way of meeting its customers' needs, by developing a SingleRAN solution, allowing them to accommodate other technologies such as GSM and UMTS whilst deploying LTE. This allowed them to substantially reduce operational costs and accommodate increasing user traffic, whilst protecting operators' investment by providing a single transport interface for all backhaul¹ traffic, together with the capacity to handle GSM, UMTS and LTE applications, using a single operation system and unified expert teams.

Architectural innovation

This refers to the ability to reconfigure an established system to link together existing components in a new way (Henderson and Clark, 1990: p12) in order to manufacture and market products that meet customer needs. This gives late-mover firms the opportunity to gain significant advantage over dominant firms but requires the late-movers to learn how the components are inter-linked into an integral whole and also necessitates unique management and organisational skills (ibid).

Let's take one of Huawei's star products – the Distributed Base Station (DBS) - as an example. This is a solution that Huawei pioneered to help telecommunication operators to build their 3G networks. The major problem that many operators faced was where to find and acquire the necessary space to accommodate the base stations which require huge space. This was particularly the case in densely populated place such as urban areas where space is limited and cost is high. Therefore it appeared extremely difficult for operators to build their 3G networks quickly and economically.

¹ In telecommunications, this is concerned with transporting traffic between distributed sites (typically access points) and more centralized points of presence.

Huawei's idea was to break the traditional base station into two separate functional modules – the Base Band Unit (BBU) and the Remote Radio Unit (RRU) which are connected by optical fibre. Because the BBU is small in size, it can be installed almost anywhere indoor such as on a wall, on the staircase or in a store room, or alternatively, in an outdoor cabinet of the existing network equipment room if operators have one. Similarly, the RRU is also small and light weighted (below 20kg) so that it can be easily installed on the mast or walls near antennas. This basically means that, compared to the bulky and heavy traditional base stations, the DBS became portable which not only minimised the requirement for space but also give operators enormous flexibility in terms of site location. In addition, the large number of bulky cables between traditional base stations and the antenna is replaced by one single optical fibre connecting the BBU and RRU replaced. This brings the advantage of high-bandwidth, low loss, and sufficient mechanical flexibility to allow deployment of the remote radio at large distances from the indoor BBU. Moreover, the DBS can be quickly reconfigured to support different mobile-network technologies or even several such technologies at the same time - therefore allowing for future evolution to 4G.

There was no major technological breakthrough. Almost all major technologies existed already. What is changed is the architecture of the existing components and Huawei's architectural innovation has made it revolutionary. Because of the multiple benefits in terms of space saving, site flexibility, higher capacity and low installation and operational costs, the DBS was considered a major breakthrough in 3G network construction and soon became an industry standard, allowing Huawei reap enormous commercial benefits in both China and overseas. Its commercial DBS was first deployed in Singapore and then at a large scale in Netherland and then many other countries including China.

Grafting innovation

Chinese MNEs have also shown an impressive ability to find new uses and applications for existing technologies, leading to the development of new products and solutions , based on the application of their core technologies in additional industries (Segelod, 2001). *BYD's* F3DM for example (the first commercialised plug-in hybrid electric vehicle that does not need a professional charging station) was launched in 2008 and was clearly an application of the firm's existing battery technology in the vehicle manufacturing field. *BYD* later repeated the same story by producing a range of electric vehicles using its newly developed ferrous-

based battery offering superior cost, capacity, and safety performance to the traditional Lithium-ion battery. Further application of its battery technologies have also seen the company penetrating into the electricity grid energy storage sector.

China South Locomotive has similarly endeavoured to extend the application of its core technologies (in propulsion and controls) to develop products in new areas, such as urban metro transit, electric vehicles, and wind power generation. Its launch of A-type metro vehicles in 2008 ended the monopoly of foreign companies in this growing Chinese market, enabling *China South locomotive* to win nearly 68.5% of the contracts awarded for such products in 2011. Its new energy vehicles and components now dominate the industry with nearly 70% of market share. In 2008 the company bought a 75% stake in *Dynex*, a specialist high power semiconductor company in the UK, in order to use the latter's advanced technologies in areas such as IGBTs² to improve the performance of high-speed trains. The company has also begun to develop IGBT modules to be used in wind power generation and construction of smart electricity grids.

4. IMPLICATIONS FOR THE IB THEORY

4.1 Do EMNEs' internationalise without ownership advantages?

Recognising many EMNEs are triggering reverse innovation, Govindarajan and Ramamurti (2012) emphasise the need to study their ownership advantages that allow them to pioneer innovations. Drawing on analysis of Indian multinationals, Kumar (2007) argues that the main source of their advantages is in frugal engineering – the ability to develop cost effective processes and products. This echoes the view of Zeng and Williamson (2007), who argue that Chinese dragon multinationals' superior ability in cost innovation is disrupting global competition. Yin and Williamson (2011) further outline several common types of innovation practised by Chinese firms including cost innovation, application innovation and business model innovation.

Our analysis builds on this literature and indicates that we should expect EMNEs' innovation capabilities to move beyond frugal or cost innovation into areas such as services-inclusive

² Insulated gate bipolar transistors.

innovation, architectural innovation and grafting innovation. In the eyes of some commentators, these may be viewed as trivial and low-level. Nevertheless, these innovation capabilities have helped many EMNEs to achieve many commercially successful innovations. As a result we are now seeing many EMNEs becoming global challengers (Boston Consulting Group, 2011) or global leaders in their industries.

The identification of EMNEs' innovation capabilities demonstrates that they do have FSAs or ownership advantages. Recognising this has a profound implication for the ongoing debate on the IB theory. As discussed in section 1, most of recent efforts in identifying EMNEs' competitive advantages centres around their low operation costs, distribution systems, institutional assets, government relationships, monopolised access to local sources at home (Cuervo-Cazurra ; Gammeltoft et al 2010b, Hennart 2012). However, these advantages may merely be 'location bound FSAs' (Rugman et al 2011) because they may not be able to enjoy cost advantages abroad and it is difficult for them transfer distribution systems, privileged government relationships and domestic monopoly position to other countries. Therefore, it still remains a puzzle that why firms from emerging economies are rapidly rising and in an increasing pace of internationalisation (Gammeltoft et al 2010b; Ramamurti 2012).

The view that EMNEs internationalise to compensate their competitive disadvantages (Mathews 2006; Child and Rodrigues, 2005; Luo and Tung, 2007) is helpful but we think that it is only part of the story and it is not able to explain why some EMNEs are successfully competing with incumbents in both domestic and foreign markets anyway. The view that their advantages lie with their CSAs is also dissatisfactory as discussed before. Our identification of Chinese MNEs' innovation capabilities indicates that they do have, beyond the widely assumed cost advantages, non-location bound FSAs (Rugman et al 2011) that are transferable and therefore can be exploited overseas.

This means that the above-mentioned puzzle is not a puzzle at all and that the OLI paradigm would still have explaining power over the internationalisation of EMNEs. Huawei's SingleRAN as discussed earlier is a clear demonstration of the company's superb understanding of its customers' needs in accommodating GSM, UTMS and LTE whilst at the same time reducing operational costs. It is this understanding and their ability to come up with innovative solution to meet customers' needs helped the company to emerge from

scratch to become the No. 2 in the telecommunication equipment industry in less than three decades and now win half of the world's commercial LTE deployment contracts.

Indeed, without a proper understanding of EMNEs' FSAs, it would be difficult to explain their rapid rise and internationalisation. For example, Sany decided in 2009 to invest €100m to build a mechanical manufacturing base in Germany and BYD recently announced that they were to build manufacturing facility in California to produce electric buses for the local market. Producing in developed countries, clearly neither of them would enjoy cost advantages and monopolised access to local resources in either home country or host countries but have all kinds of 'liabilities of foreignness'. It would be hard to understand their rationale in choosing to manufacture in high-cost countries without ownership advantages to be exploited there.

We feel that one of the problems of the critics of the OLI paradigm is that very often it is taken for granted that EMNEs do not have ownership advantages without examining the issue carefully. The orthodox view that innovation equates ground-breaking technological innovation obviously has made the situation worse. The defenders of the OLI paradigm, however, although insisting that EMNEs do have ownership advantage, often fail to specify what they are and in particular what innovation capabilities EMNEs have.

We also feel that there is a danger for scholars, having observed EMNEs' asset-augmenting overseas investment, to rush to conclude that EMNEs do not have any FSAs. As both Dunning (2006) and Narula (2012) point out, EMNEs' asset-augmenting overseas investment itself implies their existing ownership advantages that are to be augmented. In addition, as we argue below, asset-augmenting FDI does not exclude firms' ownership advantages.

4.2 The future of IB theory: the need for an opportunities + costs perspective?

The fact that EMNEs do have FSAs and therefore the OLI paradigm is still helpful in explaining their internationalisation does not necessarily mean that the OLI paradigm is capturing the full story. Indeed, we feel that the OLI paradigm and the view that MENEs internationalise mainly to address their competitive disadvantages (Mathews 2006; Luo and Tung, 2007) are both partial.

In the effort of answering the ‘why’ question of internationalisation, Dunning emphasise the importance for firms to have ownership advantages in order to overcome the costs of doing business abroad. To quote his original words:

“In order for firms of one nationality to compete with those of another by producing in the latter’s own countries, they must possess certain advantages specific to the nature and/or the nationality of their ownership. These advantages ... must be sufficient *to compensate for the costs* of setting up and operating a foreign value-adding operation, in addition to those faced by indigenous producers or potential producers” (Dunning 1988b: p. 42, emphasis added)

In emphasising the costs of foreign operations, the OLI paradigm tends to overlooks benefits and opportunities and particularly benefits of augmenting firms’ original ownership advantages by having foreign operations. This is picked up later by alternative perspectives such as the LLL (Mathews, 2006), the Springboard (Luo and Tung, 2007) and the Bundling (Hennart, 2009, 2012) frameworks. The LLL framework, for example, stresses ‘the world as full of resources to be tapped’ by EMNEs (Mathews 2006) and the opportunities of having foreign operations:

“The critical starting point for the latecomer and newcomer is that it is focused ... on the advantages which can be acquired externally, i.e. on resources which can be accessed outside of itself. Thus a global orientation becomes a source of advantage – since the opportunities through which it can expand are likely to be found in the global market rather than in its domestic environment.” (ibid, p.18)

Here, rather than costs we can see a clear and unambiguous emphasis on the benefits and opportunities arising from internationalisation. It is argued EMNEs view global competition as an opportunity to build new capabilities instead of exploiting existing ownership advantages (Bonaglia et al., 2007). It is obviously true that many EMNEs, when they internationalise themselves, do want to capture external resources and augment their assets. However, it is not true that EMNEs internationalise without any FSAs as suggested in Mathews (2006). Neither is it the case, as claimed by Luo et al (2011) that external resources are always easily available and accessible to EMNEs so that they can ‘simply buy as much of the technology and expertise they need’ (p67). For instance, Huawei, in its early years found

itself have to pay a hefty fee to industry leaders in order to assess their patents. It was only when they had accumulated sufficient patents of their own that they were able to negotiate with incumbents for cross-licensing. The company, in recent years, also had to back away from a series of acquisitions in the US particularly – for example, its bid for 3COM in 2008 and 3Leaf in 2011 - because of political pressure from the US authorities.

Therefore it seems that the OLI paradigm focuses too much on MNEs' own FSAs and the need to mitigate costs of foreign operations, and overlooks advantages which can be acquired externally. Many alternative views including the LLL and the Springboard frameworks, however, focus too much on the benefits and advantages of internationalisation and overlooks associated costs and EMNEs' own FSAs.

We think a healthier view is to consider both benefits and costs of internationalisation and the fact firms want to exploit their existing ownership advantages and at the same time determine to augment their ownership advantages. We suspect that this is true not only for EMNEs but also for DMNEs. The latter, as noted by Dunning (2008), indeed have asset-augmenting FDI in developed countries. In fact, they are also increasingly augmenting their assets in leading emerging countries such as China and India by, for example, establishing R&D centres there as suggested in the emerging 'new geography of innovation' literature (Bruche, 2009). Recent research also suggests incumbents such as GE are learning 'reverse innovation' in developing countries (Immelt et al., 2009).

We feel that the dichotomy between FSAs and asset-exploiting on one hand and ownership disadvantages and asset-augmenting on the other hand is both artificial and unhelpful. It is wrong to associate FSAs only with asset-exploiting FDI and ownership disadvantages only with asset-augmenting FDI. The fault, unfortunately, lies partially with Dunning himself. When he emphasises internationalising firms' ownership advantages in his OLI paradigm he really means ownership advantages over indigenous firms in the host countries (Dunning, 1988b; Eden and Dai, 2010; Mathews 2006) which is reinforced by later discussants (see for example Yiu et al., 2007). Therefore once scholars are convinced that firms do not have ownership advantages over indigenous firms in the host countries, they reach the conclusion that firms must be investing for asset-augmenting/asset-seeking reason. What is excluded, however, is the possibility that firms may invest and seek assets in one country but compete

with rivals and exploit ownership advantages in another country. They may not have ownership advantages over indigenous firms in the host countries but may have advantages over rivals in other countries. Therefore having ownership advantages over indigenous firms in the host countries is **not a necessary condition** for FDI. In addition, asset-seeking and asset-augmenting is not an either-or option for investing firms. Firms may even have both in one single FDI project. We believe this is the case for many EMNEs' innovation investment in developed countries by which they wish to augment their existing advantages but also with the aim to exploit the newly augmented advantages in the global market.

What we would propose, therefore, is a benefits + costs perspective and a view that all MNEs, including EMNEs and DMNEs, are looking for exploiting their ownership advantages and at the same time augmenting their existing advantages. Not only they need to have ownership advantages to mitigate costs of foreign operations but also they internationalise for the benefits of improving and strengthening their advantages.

5. CONCLUSION:

In this paper, we draw evidence from a case study of four Chinese MNEs and demonstrate that they do have FSAs which helped their internationalisation process. Giving Chinese MNEs' capabilities in services-inclusive innovation, architectural innovation and grafting innovation, we argue that we should accept EMNEs' FSAs and even knowledge-based FSAs. We suggest it is wrong to assume innovation only derives from DMNEs.

The implication is that the OLI paradigm would still have some explaining power over EMNEs' internationalisation. Indeed, without recognising EMNEs' FSAs, it would be difficult to explain their rise and internationalisation. However, we also argue that the OLI paradigm pays insufficient attention to the benefits and opportunities regarding augmenting the EMNEs' existing ownership advantages. Therefore we propose that a healthier view is to consider both the costs and benefits in internationalisation and the fact that MNEs are looking for asset-exploiting but also asset-augmenting in their internationalisation endeavour.

Obviously we are not arguing that all Chinese MNEs have successfully accumulated their FSAs. Nevertheless we demonstrate that some Chinese MNEs do have impressive FSAs in contrast to the traditional wisdom that Chinese firms are merely copycats. Although our analysis is

focused on China, we believe that we should also expect FSAs from many MNEs from other emerging economies (see, for example, the case of CEMEX in Lessard and Lucca (2009)).

We believe that further research is urgently needed in leading EMNEs' innovation capabilities and their role in internationalisation. This requires researchers to give up the mindset that innovation only means ground-breaking technologies. Indeed, taking a broader definition of innovation and recognising 'lower-level' innovation is at least equally, if not more, important for commercial success allow some researchers to identify Chinese MNEs' incredible innovation capabilities (see, for example, Ernst, 2008; Yin and Williamson, 2011).

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