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Competitiveness in India and China: The FDI Puzzle

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Abstract: Given their growth records, large markets, and reformed economic systems, both China and India appear to be equally likely candidates for foreign direct investment (FDI). Yet, China has received substantially more FDI. The literature comparing FDI in these two countries is small, and does not provide conclusive evidence to explain this puzzle. Applying the Porterian framework of the competitiveness of nations to compare China and India, we garner evidence that differences in demand, factor conditions and firm strategy, structure and rivalry are not sufficient to explain the differential in the two countries' FDI flows. Differences in related and supporting industries, as well as Porter's other two factors—government and chance factors—are more compelling. We identify China's early entry into East Asian production networks in the 1980s as a key factor pushing China ahead of India in terms of FDI. We argue that this coincidental mix of timing and geography (Porter's 'chance' factor), pushed forward in China by establishing special economic zones, gave China a sustainable competitive advantage for the following two decades. What is implied from these findings is that China's FDI sources have been much larger and heavily slanted towards East Asia and manufacturing, while India, having missed this particular historical phase, needed to find an alternate route to development and global competitiveness.

Competitiveness in India and China: The FDI puzzle

Introduction

Impressive projections of growth in India and China are increasingly optimistic and have caught the attention of analysts and policy makers around the world. By purchasing power measures, in 2010 India was ranked as the fourth largest economy in the world in terms of the value of goods and services produced annually, and China was second. In the five years from 2005 to 2009, India's average GDP growth rate has been 8.5 percent and China's has been 11.4 percent (World Databank). The importance of trade and foreign investment in China has grown substantially, which has been a hallmark of the success of China's opening policies that began almost three decades ago. India began to encourage trade and foreign investment a decade later than China, but has also successfully changed India's trade dynamics with the global economy. Based on the World Economic Forum's Global Competitiveness Index for 2010-11, China ranked 27th and India was 51st. In the 2001-02 report, China was 39th and India was 57th, showing that competitiveness has improved substantially in both countries relative to many others (World Economic Forum, 2009).

In contrast, in decades past both India and China pursued import substitution industrialization policies aimed at isolation from the global economy. Both countries combined restrictive trade policies with various degrees of economic planning and regulation, all of which focused on building productive capacity at the expense of consumer preferences. Imports and production of non-essential consumer goods were highly restricted. The fact that these economies have rejoined the market-oriented, international system represents revolutionary shifts in policy, and consumers have been one of the major beneficiaries.

Given the growth paths and the size of these two economies, both countries would seem to be magnets for multinational corporations. However, China's foreign investment, and especially foreign direct investment (FDI), has been multiple times more than India's. Between 1995 and 2009, China received approximately \$730 billion more than India. There has been much debate about the measures used to assess the FDI potential of the two countries, but even when adjustments are made for differences in

data categories, China's FDI is surprisingly higher than India's (Khanna 2007, pp.157-58; Swamy 2006). In this paper we focus on what factors or strategies caused China to attract more FDI as compared to India. Using Porter's framework, we explore each country's circumstances that support or impede the pursuit of strategic competitiveness (Porter, 1998a). We argue that Porter's factors of "chance" and "government" played crucial roles in attracting a higher level of FDI to China and also defined the type of FDI in one nation versus the other. We believe that the story of China's substantial lead in FDI lies in its fortuitous location intertwined with the timing of its reforms that resulted in its increasingly central role in the East Asian region.

China-India FDI Literature

The substantial difference in the level of FDI receipts in these two nations is a puzzle. There are numerous publications comparing economic growth and transition in China and India on various dimensions, but there are very few studies that focus on FDI per se.¹ Most studies focus on explanations for differences in growth and other performance variables, with FDI sometimes included as one factor.

One exception is a paper by Wei (2005) that tries to explain the FDI differential directly. Using OECD data across countries and over time on home country outward investment to China and India, Wei tested for possible factors that are significant in explaining FDI flows. Based on 1987 to 2000 FDI flows for 15 countries, Wei found that both countries benefit from their large domestic markets (measured as the ratio of real home country GDP to real host country's GDP), but that China's relatively larger market overwhelms some of India's other advantages. Interestingly, India benefits from relatively lower labor costs, as well as lower country risk, while China benefits from more advanced trade ties with the OECD countries. This approach of using outward FDI data from OECD provides adequate data for statistical analysis and also minimizes data discrepancy issues since the FDI definitions are the same and are reported by the home countries. However, as Wei's study only covers OECD countries, which do not make up the majority of FDI inflow to either India or China, the author acknowledges that the results are only a part of the story.

A second paper by Sinha, Kent and Shomali (2007) used data from three sub-regions in China for 1978-2005, and separately from six states in India for 1992-2005, to estimate in each case how the business climates affected FDI inflows. In the case of

India, their model suggests a positive correlation between FDI inflow and human capital, market size and rate of growth. In their China estimates, structural changes, strategic infrastructure and strategic policy are positively correlated with FDI inflows, along with market size and rate of growth. As these data, variables and results are described only briefly in the paper, it is difficult to compare this work with Wei's study or to provide more details. Not surprisingly, the authors conclude that India needs structural change, better infrastructure and more enlightened policy to attract more FDI.

Using an alternative approach, Henley (2004) focuses on political differences. Henley argues that some interest groups within India have impeded liberalization. Specifically he suggests that they pressure various levels of government for spending resulting in public deficits that prevent government funding for infrastructure and other pro-development projects, thus discouraging FDI. In contrast, local governments in China responded to incentives to promote FDI, including direct mandates to show that they had attracted FDI, as well as opportunities to reap the tax revenues that would be generated by these companies. Henley argues that local governments in India have much less motivation to want FDI in their jurisdictions. While political differences no doubt matter in some aspects—especially the slowness of opening the economy to global business in the 1980s—this explanation seems inadequate to us. There are certainly states in India that have attracted FDI, just as in China certain provinces and cities have benefitted relatively more from foreign investment. In addition, some analysts argue that India's democracy is a distinct political advantage over China's one-party system, which would make politics a relative strength for India. Fan and Li (2009) note that while the Indian growth process is chaotic, India's soft infrastructure, which includes an independent press, an independent judicial system and educational system, is robust putting India at an advantage. Particular credit is given to the banking infrastructure that was not deeply affected by the recent financial meltdown of the developed nations.

Kumar and Worm's (2004) study provides a detailed examination of the various aspects of institutional environments in India and China in order to compare business negotiation processes. They note that while the regulatory environment can be a hurdle for investors in both nations, these barriers are more easily navigated in China than in India given the incentives for bureaucrats to promote economic growth in their regions. This has been substantiated by Sebastian, Parameswaran and Yahya (2006) in their examination of the Indian business environment via a survey of business managers.

Their results showed that Indian bureaucracy is viewed by a number of sources as tedious, vague and tiring.²

In a more comprehensive comparison of economic development in the two countries, Guruswamy and Singh (2010) focus on key differences in policies and performance. As part of their analysis, the authors discuss China's integration with Asia more generally as one distinct difference from India. In this paper we argue that China's timing and geographical relationship with Asia is *the* key factor for understanding the differential flows of FDI. China's post-Mao reforms began in the late 1970s, opening southern China to foreign investment and trade in the early 1980s at a historical moment when companies from Japan, South Korea, Hong Kong and Taiwan were looking for low cost manufacturing locations beyond their own borders. Complementary to this was also the fact that the China option was geographically convenient, and was helped by similar cultural affinities, which led to the development of a manufacturing base that then built economies of scale and agglomeration. This process led to infrastructure improvements, increased trade, technology spillovers and eventually spread effects to other parts of China. Since India's opening to foreign investment and trade was a decade, India was not an option for this particular wave of cost-seeking capital flows.

Our analysis fills an important gap in this literature. There are very few studies that address the reasons for the large FDI differential between India and China, although this fact is well known. Partly due to macro data compatibility and availability issues, econometric analysis of this question is problematic and when done, is not very informative. Using a different approach, this paper carefully incorporates a series of country-level factors that have been identified in the literature as key to attracting FDI to provide a thorough analysis of the comparative competitiveness of China and India.

FDI Location Literature: increasing importance of spatial concentration and alliances

FDI location has been studied in the literature with a focus on factors that push or pull companies to invest abroad (Krugman 1991, Porter 1994, Chen and Chen 1998, Majocchi and Strange 2007). An early FDI framework was provided by Dunning (1977, 1980)—the so-called eclectic approach to understanding the location decisions of foreign companies. In addition, other studies such as Rugman and Verbeke (2001) and Andresson et al. (2002) show that international strategies are formulated to tap local

know-how and resources to increase competitiveness. In more recent work Dunning (2008) refined his ideas given the entrance of new participants such as China and India as viable investment locations as well as sources of outward investment. He also expands on changes in the spatial dimension of FDI location, observing a paradox: although more nations have become welcoming to investment, concentration of production in certain locations has been more the norm, at least in certain sectors such as manufacturing. Clustering, then, encourages cooperative ventures and may help firms learn. He discusses the 'contemporary network MNE' in this context as a coordinator of a global system of value added activities referencing emerging economies of Asia as a testing ground for the interplay between institutional change at the macro level and organizational transformation at the micro level.

Michael Porter's work has also defined the development of this literature. Porter (1998a) asked whether there are specific characteristics in a nation that result in firms that create and sustain competitive advantage in certain industries. Porter argues that in this new age, when firms in different nations form alliances, those firms based in nations which support true competitive advantage eventually emerge as international leaders. To succeed, competitive advantage can be created in two distinct ways—configuration and coordination. Configuration is where a global firm spreads activities among nations to serve the world market; coordination is the ability of a global firm to manage productively the dispersed activities from manufacturing to distribution to marketing. Porter's work on clusters recognized that while location remains fundamental to competition, its role has changed in terms of how companies should be configured, how institutions and ancillary industries can contribute to its continued success, and how governments can support economic development and prosperity.

Along these lines, Contractor (2009) noted that cooperation among firms is an integral part of the new model for business in a globalized world and has made some sweeping changes in the global environment from liberalization of FDI rules, changing intellectual property rights, harmonization of standards and outsourcing of business functions. With this business model the largest economic grouping is no longer a MNC but global industry networks consisting of companies that simultaneously compete and cooperate. In line with Porter's arguments, Contractor (2009) shows that the new alliance network economy provides more flexibility, lowers risk for each member company and speeds the response to changing markets more than is possible within a

single firm. The value chain is thus outsourced over several companies in different nations creating a cooperative model that has become an essential theme in global business.

Hypothesis

In this paper we apply a broad scope of factors that are included in the concept of national competitiveness. We draw primarily on Porter, since his work emphasizes the characteristics of nations that attract companies to invest. Drawing particularly on the location and clustering aspects of FDI, our specific research proposition is as follows:

We hypothesize that China had a fortunate combination of geographic location and timing that enabled firms to build alliances with other firms of multiple nations to meet the needs of international business at that time. This happened both earlier and more completely than in India, thus attracting more FDI that in turn contributed to China's increasing competitive advantage.

Specifically, the establishment of the special economic zones in southern China in the early 1980s provided incentives, labor and infrastructure for foreign firms to locate there for low-cost, labor-intensive manufacturing. As East Asian firms were central to the manufacturing supply chain at this time, moving to China was geographically and culturally convenient. Once begun, a path-dependent virtuous cycle was set in motion that built an integrated supply-chain manufacturing base with economies of scale and agglomeration effects incorporating Chinese firms into this vital dynamic.

Comparing levels of FDI and FDI performance

In this section we compare data on inward FDI to India and China to establish the differences and trends in FDI. Based on the data in table 1, India in the 1970s had a lead in FDI compared to China. However, while India's FDI share fluctuated in the decade of the 1970s with a substantial rise in 1980, China was simultaneously opening to FDI and trade, resulting in an almost steady rise in FDI both from within Asia and the rest of the world. Twenty years later, China became the world's strongest magnet for overseas investment (Wei and Dutta, 2004). Post 1980 the proportion of world FDI flowing to

India rapidly declined and despite liberalization in 1991, FDI remained low for the next two decades until 2006. China's large FDI differential over India is clearly reflected in these figures.

[Table 1 here]

To further substantiate the differential in FDI between the two nations, table 2 presents investment performance indices reported by UNCTAD. The Inward FDI Performance Index is the ratio of a country's share in global FDI inflows to its share in global GDP. A value of one implies that the shares of global FDI flows and global GDP are equal while a value higher than one implies that the nation attracts more FDI than could be expected on the basis of its relative GDP size.

Based on the performance indices for these nations, China consistently has attracted more FDI than would be expected based on its size. With the Asian crisis in 1997, the performance index, while still greater than one, did substantially decline. This trend continued until the 2000s when it increased its FDI share once again only to decline again post 2005 and go below one for the first time since 1988. India showed a wholly different picture in terms of FDI performance. While remaining less than one throughout the period, it showed a steady increase except for a slight decline following the Asian crisis. In the more recent years, its FDI performance has been on the rise.

The Inward FDI Potential Index, in the second data column in table 2, captures several factors other than market size that are expected to affect an economy's attractiveness to foreign investors. It is constructed as the un-weighted average of the normalized values of several variables that correspond largely to the levels of economic development.³ It is an average of the values of the variables, normalized to yield a score between zero, for the lowest scoring country, to one, for the highest. This index shows that India lagged behind China over the three decades in its score for potential FDI. Moreover, China consistently increased in attractiveness to receive FDI over time, while India's score remained almost constant since 1993 even though this is after India's economic liberalization had begun in earnest.⁴

[Table 2 here]

Analytical Framework

We use Porter's model, also known as the diamond framework, to explain the differences in the FDI that China has received as compared with India. Porter's model includes four basic interacting elements that a nation can create resulting in advantages that are determinants of a nation's competitive advantage. He argues that each of these four elements individually, and as a whole, lead to a nation's advantage or disadvantage in global markets.

The elements of the diamond are described as follows.

1. **Demand Conditions:** Higher demand in local markets leads to national advantage. Demand may include both the quantity demanded and the sophistication of the consumers in the home market. For example, if the market for a product and its sophistication is largely local, then local firms devote more attention to that product than do foreign firms, leading to competitive advantage when the local firms begin exporting the product.
2. **Factor Conditions:** Factors such as land, labor and capital that can be exploited by firms in the nation are seen as beneficial in advancing competitiveness of firms. As economies develop and compete, if they have not yet invested in such factors as infrastructure, skilled resources and technology, then this in itself is an opportunity for entrepreneurship and innovation. For instance, if a nation has a shortage of labor, firms may be motivated to automate or outsource its labor-intensive tasks. Therefore, having a good stock of endowments may be beneficial but is not sufficient to be competitive, just as lack of endowments does not have to be a permanent constraint for any given nation, especially because it creates opportunities for alliances among firms across nations.
3. **Firm Strategy, Structure, and Rivalry:** Local conditions affect firm strategy. Firm strategy and structure help to determine in which types of industries a nation's firms will prosper. In Porter's model, less competition (low rivalry) makes an industry attractive

for entrants or incumbents. However, for an industry and a nation over the long-term, more local rivalry is better since it puts pressure on firms to innovate and improve, making it more likely that they will be able to successfully compete globally.

4. **Related and Supporting Industries:** Ancillary businesses are needed by firms for parts of the value chain, such as suppliers and distributors who then support local industries. These include consultancies, contractors, outsourcing firms or any support firms that help in cost effectiveness and innovative inputs and outputs. This effect is strengthened when the suppliers themselves are strong global competitors.

Elements of the Porter's diamond affect one another and depend on each other. For example, factor conditions will not lead firms to innovate unless there is sufficient rivalry. Increased demand and consumer awareness will lead to increased local firms entering the market, thus increasing rivalry. This increased rivalry should lead to more innovation, which increases the need for support industries to make the value chain stronger thus increasing growth and stimulating more demand.

In addition to the basic diamond, Porter also notes two other variables can play an important role—government and chance. He defines the role of government as that of a catalyst (or impediment) to encourage and support (or suppress) entrepreneurship and policies that help move firms in a nation to higher levels of competitive performance. Porter emphasized that government should encourage companies to raise their performance, stimulate early demand for advanced products, focus on specialized factor creation, stimulate local rivalry and enforce anti-trust regulations.

Porter also recognized that chance can play a role in invention, entrepreneurship and competitive advantage. He noted that chance events are important since they often create conditions that can shift competition in unexpected ways and alter conditions in the diamond. While chance events can allow shifts in competitive advantage in an industry, a nation's attributes play an important role in how a nation exploits them to its advantage. Porter stated in his 1998a work, "The nation that has the most favorable 'diamond' will be most likely to convert chance events into competitive advantage" (p. 125).

Analysis and Discussion: Explaining the China-India FDI Differential

Using Porter's model of a nation's competitive advantage, we present a comparative analysis of the two countries' determinants in order to identify the differentiators that may explain the large FDI flows to China as compared with India.

1. Demand conditions

Countries gain a competitive advantage and hence are more attractive when they present an untapped market share for goods and services as well as a growing sophisticated and healthier customer base. India and China are both attractive from this angle with large populations defining potentially underserved markets, with substantial increases in levels of income over time.

China's official population was 981 million in 1980, and India's was 687 million. In 2008, China still surpassed India at 1.32 billion while India's population was 1.14 billion. India is expected to surpass China in the future since India's growth rate was substantially higher at 1.34 percent per year compared with China's 0.55 percent in 2008 (World Databank).

In addition to the population demographics, in the last decade both nations have seen increases in per capita incomes creating additional capacity for consumption. However, these trends have changed over time. In 1980 India had a higher GDP per capita at \$229 compared with China's \$186 (World Bank Databank). China had just opened its markets in 1979. Since then, China grew very rapidly and in the last three decades has witnessed almost a doubling of its GDP per capita, so that by 2008 China's GDP per capita had reached \$5,083 while India's had reached only \$2,600. Since 2001, however, India's growth has improved to 5.6 percent per year compared with 3.2 percent between 1980 and 2000. Still, China continued to grow quickly with GDP per capita growing at 8.1 percent in the first two decades and 9.3 percent between 2000 and 2008.

While China is ahead of India by these measures, both countries have seen impressive growth. In the early 1980s India was ahead, with China surpassing India's GDP per capita in the middle of that decade and sustaining that differential. China's growth spurt was due in part to its ability early on to attract FDI, while India had not yet liberalized its foreign investment regime. In addition, if market size is taken into account as with the figures in table 2, China still received significantly more FDI than India. But

the demand factor alone is not very helpful in explaining this differential, as both had very large demand potential.

2. Factor Conditions:

Much of the classical literature in international development notes that countries with a relatively large pool of transportation and telecom infrastructure, technology and a skilled labor force offer advantages and thus attract FDI.

Infrastructure:

The most common reason cited in the press and manager surveys for China's lead in FDI over India is better infrastructure. In India, infrastructure is seen as an impediment to growth of the manufacturing sector, where gains made through low labor costs are overshadowed by losses due to bottlenecks especially in power supply and transportation (Walker 2006). Two related points provide perspective in this regard. First, the differences in infrastructure perceived today did not always exist. In the early 1980s, infrastructure was underdeveloped in both countries, and by some measures was superior in India (Patel and Bhattacharya, 2010, p.53). Second, from Porter's perspective, infrastructure development is endogenous, meaning that its development will occur to meet the demands for it. An example would be Infosys owners threatening to move their headquarters as a way to lobby the Indian government for a new airport in Bangalore. Huang (2008, p.268) argues that China responded to the needs of foreign investors once firms had been encouraged to invest. This process began in southern China, just north of the border with Hong Kong, in the early 1980s. China began by building infrastructure in special economic zones, partly because the conditions for investment throughout China were very poor.

As a result, China's physical infrastructure has improved significantly and while its electricity supply and communications infrastructure remain weak, its physical infrastructure with roads and railways is substantially better and has grown faster than India's. Since the early 1990s, India's growing economy has witnessed a rise in demand for transport infrastructure and services. Most highways in India are underdeveloped with narrow roads and a majority of India's cities are not well connected nor do they have access to all-weather roads. The dramatic increase in air traffic for both passengers and cargo in recent years has placed a heavy strain on the country's major airports. While

India has only recently begun to take steps in this area, China's physical infrastructure has improved significantly due to massive government spending during the last three decades.

Tables 3 and 4 present recent statistics comparing communication and transportation infrastructure in the two countries. In India, fixed and mobile telephone density is relatively low with mobile subscribers at about 21 for each 100 persons nationwide while China is much higher at 42 subscribers per 100 persons. A comparison of the internet infrastructure in the two countries shows that China has had a higher percent of users and penetration of internet, but the percent of user growth was higher in India between 2000 and 2008. In terms of Internet bandwidth and electric power consumption, however, India lags behind China. India has 12 major and 187 minor and intermediate ports along its more than 7,600 km long coastline. In comparison, China has 16 large scale ports along its eastern and southern border. India's inland water transportation, however, remains a challenge. In aviation, and roadways, China has made major strides relative to India, with higher number of airports and doubling of roadways in the recent years.

[Tables 3 and 4 here]

Based on data from the World Bank enterprise survey of infrastructure constraints as perceived by firms, both nations have room for improvement especially in comparison to OECD nations and, in most cases, compared to East Asia and Pacific nations as well. For instance, the time taken to get an electricity connection is about the same in both nations, while firms in India reported a greater loss due to electricity constraints. While a slightly higher percentage of firms in India identify electricity as a major constraint, a higher percentage of Chinese firms report transportation as being the major blockade in doing business (World Bank Enterprise Survey).

Technology:

The Global Information Technology Forum's report (World Economic Forum) compares countries' readiness with regard to technology. This is useful in comparing the two nations in terms of their technology preparedness. The report discusses how countries leverage information communication technology (ICT) for growth and

development using the Networked Readiness Index (NRI). Based on a mix of hard data and firm surveys, the NRI is broken down into three components—environment, readiness and usage. In the overall index, India outperformed China from 2002 to 2007, but then China pulled ahead of India in the last two years of reported data (2008-09). The components of the index indicate that India lags China in infrastructure but that the market environment is better. The political and regulatory environment is also more receptive in India for much of this decade. At the individual and business level, India outranks China, but the Chinese government is more prepared for change than the Indian government, according to these data. In usage of ICT, India lags behind China in all three areas, which includes the individual, business and governmental areas.

Labor Force:

On average China has a larger workforce than India, both in terms of permanent full time employees as well as temporary or seasonal employees (World Bank Enterprise Surveys). This is largely due to the higher participation of women in the workforce in China. However, while in China the percentage of workers who are unskilled is much higher than in India—86 percent compared with 36—in terms of the absolute number of skilled workers, the two countries are on par.

India has a younger workforce compared to China. Over 94.7 percent of the population is less than 65 years old and over 30 percent are under 14. China has about 91 percent of the population under 65 but has only about 18 percent of the population that are younger than 14. However, two factors that work against India is that it has a much lower literacy rate than China (61 percent compared to 91 percent in China) and a smaller urban population (29 percent compared to 43 percent) (World Databank).

While wage comparisons are difficult to make across nations, Ashenfelter and Jurajda (2001) found that basic wage rates for India were lower than in China. Wei's (2005) results suggested that lower labor costs in India explain some of that country's FDI inflows. The Global Wage Report (ILO, 2008) data also indicate that wages on average are lower in India than in China. Using a purchasing power parity exchange with the US dollar, the minimum wage in India was 113 as compared to 204 in China as of 2007 or later. Between 2001 and 2007, the minimum wage in China grew over 8 percent while in India it increased less than 2 percent (ILO, 2008, Table A2). Average real wages grew in China over 9 percent between 1995 and 2000 and over 12 percent between

2001 and 2007. For the same time periods India's average wages grew less than 2 percent.⁵ China's new labor law, adopted in 2009 and implemented in January 2010, has also reportedly added to labor costs since these data were collected.

Overall the comparison of factor conditions is mixed, with China ahead with some and India ahead in others. Both countries have made major progress with infrastructure, but weaknesses remain in both places (Patel and Bhattacharya 2010, Bai and Qian 2010). India has a younger workforce, but with less literacy overall. Both countries have relatively low wages for both skilled and unskilled labor. As a key differentiator in the flow of FDI, it is difficult to argue that these factor conditions have been the main variable, especially if we consider the flows of FDI since the early 1980s.

3. Firm Strategy, structure and rivalry:

A third part of Porter's diamond emphasizes local conditions that affect firm-related factors, i.e., how firms are created, organized and managed, and the benefits of rivalry or competition. Ceteris paribus, if a country makes it easier for firms to enter the markets and free competition exists, it attracts FDI. The pattern of rivalry at home also shapes the process of expansion, corporate culture, innovation and growth for firms. In terms of ease of entering the markets or doing business within these nations, China and India appear fairly on par.

While China and India have been liberalizing and attempting to increase competition in their home markets, foreign firms still face serious challenges in entering both of these markets. Table 5 reports key indicators from the World Bank Enterprise Surveys. Although there is some variation between China and India in terms of the specific entry constraints reported in these surveys, overall neither country scores well. While many more firms report having difficulty and needing to pay to obtain licenses and permits in China than India, more firms in India report the need to pay gifts to get basic things accomplished such as obtaining an import license, installing a phone and obtaining access to electric power. Incidence of graft is higher in India, but high in both nations, while firms identifying corruption as a major constraint is about the same in both countries at about one quarter of the firms surveyed.

[Table 5 here]

Another firm level issue that is influenced by local conditions is the mode of entry of FDI, whereby the modes of expansion and the options available within each country attract FDI differently. The relationship between mode of FDI choice and the nation's competitive environment has been examined in recent literature (e.g., Mattoo, Olarreagaz and Saggi 2001, Muller 2006). The preferred choice of mode of entry is often a trade-off between technology transfer and market structure and competition in the host nation. The choice of affiliate ownership structure can be very complex since it is contingent on national, industrial, organizational and project factors (Luo, 2001). The pattern of rivalry and the level and ease of entering these markets are reflected in the modes of FDI that these nations promote. If companies are choosing between Greenfield, joint ventures and merger and acquisition (M&A) investments as the mode for FDI, the preferred mode typically depends on the suitability of targets, the competitive situation and other characteristics specific to the industry in question. While mode of entry in itself may not suffice to explain the FDI differential within the two nations, if more firms enter into one nation versus the other in a particular form, it may be one indicator of whether firm entry constraints or some other factor is affecting the FDI flow differently in one nation as compared with the other (Thursby and Thursby, 2006).⁶

Greenfield investments are increasingly common in R&D expansions abroad (UNCTAD). They are attractive since they bring in new equity capital investments and create jobs in the host nation. Based on data from UNCTAD from 2002 to 2004, China saw 581 Greenfield investments in 2002 that more than doubled the following year to 1299 and increased further to 1529 by 2004.⁷ In sharp contrast, India had less than half of China's investments for the corresponding year with 250 Greenfield investments for FY 2002, which grew to 457 in FY 2003 and 685 the following year, FY 2004.

While globally, joint ventures and strategic alliances are increasingly common particularly in the R&D area (Thursby and Thursby, 2006), joint ventures in China and India have not been popular and may not help in explaining the differential in FDI due to firm entry constraints caused by mode of entry restrictions. Based on data from SDC (Thomson SDC, 2010) on joint ventures in India and China, excluding same country joint ventures, in India from 1985 to 2009 there were very few joint ventures—5 from Singapore and 4 each from the UK and USA. For China, between 1983 and 2009, there were only 131 joint ventures. Hong Kong, Singapore and the U.S. dominated the joint ventures with China.

If an acquisition results in advancing market positioning and some R&D activities are included in the takeover deal, M&A may be favored over joint ventures and strategic alliances (UNCTAD). Cross-border M&As generally represent the fastest means of building up a strong position in a new market, gaining market power, and indeed, market dominance and competitive strength. In terms of firm structure and competition, cross border mergers and acquisitions appear to have been the most attractive entry mode for both nations. Based on the SDC data on mergers and acquisitions, in China there were a total of 10 M&A transactions (1 from within China) in the 1980s while India witnessed 25 M&As (11 of them were among Indian companies) in the same decade. The 1990s witnessed a 116 fold increase to 1,049 M&As in China from outside nations, while India witnessed a 52 fold increase to 738 M&As for the same period. While the 1990s saw a boom in the mergers and acquisitions markets with a continued rapid increase from East Asia, Europe and the United States, the pace slowed down in the 2000s compared to the earlier decade. India had a four-fold increase in the cross border M&A market and a five-fold increase was witnessed in the Chinese M&A scene in the 2000s.

In sum, both India and China appear to present similar challenges to foreign investors with respect to modes of entry. Greenfield investment became a viable option late in both countries; joint ventures have not been very common in either market; and both countries have benefitted about the same from M&A activity. Hence differences in local conditions affecting firm level factors are not very powerful in explaining the larger FDI flows to China as compared with India.

4. Related and Supporting Industries:

Porter stated that competitive supplier industries can provide “efficient, early, rapid, and preferential access to inputs,” which are basic production needs (1998a) More linkages within an industry attract more FDI, *ceteris paribus*. With the advent of outsourcing and global production networks, these linkages, both forward and backward, become a critical and essential catalyst for FDI attraction. Porter described these clusters as geographic concentrations of interconnected companies and institutions in a given industry or area (Porter 1998b). He argued that the enduring competitive advantages in a global economy are often heavily local, arising from concentrations of highly specialized skills, knowledge, institutions and rivals, related businesses and sophisticated customers.

These clusters could be horizontal or vertical in nature and indicate the presence of support industries that could assist in the supply chain process thus creating competitive advantage which would attract FDI.⁸

Similar to clusters, networks are alliances of firms that work together towards an economic goal. They can be established between firms within clusters but also exist outside clusters. Networks can be horizontal and vertical. Horizontal networks are built between firms that compete for the same market, such as a group of producers establishing a joint retail shop. Vertical networks are alliances between firms belonging to different levels of the same value chain, such as a buyer assisting its suppliers for upgrading (UNIDO).

Many studies have focused on the development of clusters and production networks in East Asia (e.g., Ernst & Kim 2002, Naughton 1997, Sohn 2002, Chen and Liu 1998, Chen et al. 2007, Gaulier et al. 2009, Ando and Kimura 2003, Saxenian 2002, Yusuf et al. 2008, Guruswamy and Singh 2010). These studies support the argument that China's manufacturing advantage has come about partly because of its interconnectedness with the global supply chain. The large number of supply clusters in China has contributed significantly to the nation's manufacturing competitiveness, both because of competition (or rivalry in Porter's terms) and because of the spillover benefits from the agglomeration of industry. Further, these firms in China are globally connected, which helps them with upgrading and expansion opportunities. While this process has been concentrated in southern China because of the early establishment of the special economic zones in the south, other parts of the country are also now linked, such as the Beijing-Tianjin corridor and the Yangzi Valley area from Shanghai to Nanjing to the west.

India also has clusters and global linkages, but the historical development has been quite different. In India domestically-oriented, family-owned conglomerates have been in existence for a long time. According to a UNIDO survey of Indian Small Scale Industries (SSI) clusters undertaken in 1996, there were 350 SSI clusters and approximately 2000 rural and artisan based clusters. It was estimated that these clusters contributed 60% of the manufactured exports from India.⁹ In addition to the more traditional small scale rural manufacturing clusters in the clothing sector, India has also developed significant global linkages to software services and auto manufacturing (Gereffi and Guler 2010, Basant 2008, Gregory et al. 2009).

Despite such achievements, the majority of the Indian clusters share significant constraints such as technological obsolescence, relatively poor product quality, information deficiencies, poor market linkages and inadequate management systems. They are also focused on the domestic market and poorly linked to global supply and marketing networks. This is a major difference as compared with China, and is essential for understanding the FDI differential.¹⁰ One indicator of the consequence of this difference is that China's share of exports in 2008 that were classified as high-tech was 24 percent as compared with India's 2 percent (World Databank).

5. The role of government and institutions:

In addition to the core diamond framework, Porter also considers the role of government and institutions, and chance, in understanding the determinants of competitiveness. Porter emphasized the role of government in advancing a nation's agenda in economic development and competitiveness. Government is critical for competitiveness since it sets policy, but other supporting institutions such as the legal system are critical for sustaining competitive advantage for any nation. The private sector is also a crucial actor in improving competitiveness and in influencing economic policy since they are most impacted by the investment environment.

Doing business in either country has its bureaucratic hurdles. The two countries require about the same time and effort to start a business, and they have different and yet equally difficult firm entry constraints (World Bank Enterprise Survey). India has a democratic representative government with stronger legal and financial systems, more political freedom, unrestricted information flow, and a more established private sector. India was also an original member of the WTO and a member of GATT from the beginning. China has an underdeveloped legal system and joined WTO only in 2001, has less economic freedom, controlled access to information and questionable protection of private property. Yet even with these apparent relative institutional advantages in India, much more FDI has flowed to China.

Policy is the key here. While India's institutions may be stronger, the ambivalence in government policy has affected the environment for FDI in terms of programmatic initiatives adopted to promote or impede business development. For example, India has adopted public-private partnerships in infrastructure development programs, while in China more than 90 percent of the infrastructure development has

been through government funding. In India multinationals often build their own campuses with self contained power generation because the public supply is inadequate. In China, partnering with local government and/or locating in a development zone have been the main routes to access to utilities. In addition, as discussed in Henley (2004), local governments in China were given incentives to attract FDI while this was not the case in India.

As Meredith (2007) notes, while India is democratic and China is authoritarian, capitalistic India is often anti-business and communist China is usually pro-business. China's leadership sees economic growth as the key to retaining its hold on power, increasing influence in the world and strengthening the military to cope with threats to national security. In contrast, fifty years of socialist dogma and policies have left India with political and bureaucratic hurdles that constrain rewards for enterprise, initiative and merit on the one hand, and the operation of the price mechanism on the other. Chinese leaders, as part of their longer-term strategic vision, have focused on promoting English language and information technology skills, backed by the necessary telecommunications and power infrastructure, while in India the IT sector's success is largely attributed to its nature and speed that caused it to escape government control and regulation (Thakur 2003; Yardley 2011). Hence, in China firms must work on developing good government relations while in India it is best to avoid government. Both have their drawbacks.

So far we have explored all but one aspect of Porter's model. While, demand, factor conditions, and firm strategy, structure and rivalry show differences between China and India, these are not significant enough to explain the very large FDI differential. The factors tied to related and supporting industries, and the role of government and institutions, begin to tell the story. China's leaders decided to exploit the global market place for development about a decade earlier than India, and designed policy to explicitly attract and serve foreign firms. Clusters of industries with strong linkages to the global economy were also formed earlier in China, and thus became deeper as a result. We turn now to the additional factor that has not been fully recognized in the literature—the 'Chance Factor'—that China was in the 'right place at the right time'.

6. The Chance Factor: timing and location

The last of Porter's factors that gives a nation competitive advantage is not easily quantifiable. Recognizing that not all business success is based on careful planning and brilliant strategies, Porter includes "chance" as a factor that may create competitive advantage for nations. We argue that China's success with FDI as compared to India can be largely attributed to 'chance' being a catalyst; i.e., being located at the right geographic proximity and adopting reforms at a propitious time.

At the time that China began to open to international markets in the early 1980s, East Asian development had advanced to the point where companies were seeking lower costs. The processes of urbanization and industrialization in East Asia drove up labor and land costs. Industrialization increased demand for factory labor, while urbanization gradually drained the countryside of underemployed, low-paid agricultural labor that had provided armies of workers willing to labor for low (but still higher than agricultural) wages in the early stages of industrialization. Growing demand combined with limited supply of labor had begun to drive up wages. Rising living standards and democratic transitions in South Korea and Taiwan in the late 1980s further added to labor militancy and demands for higher wages. Similar dynamics operated regarding land costs. The East Asian countries were all densely populated with mountainous geography. Land near transportation lines was increasingly expensive. Growing environmental consciousness and consequent government regulation led to further cost increases. And the rise of the value of the yen in the mid-1980s added substantially to Japan's costs. In highly competitive global markets, these rising costs began to hurt the demand for East Asian goods, threatening to undermine continued growth. One response to this competitive challenge was to shift labor intensive, and sometimes polluting, manufacturing operations from these home countries to some place abroad. Taiwan, South Korea, Japan and especially Hong Kong are located on China's doorstep. China began encouraging FDI in the early 1980s, and within a short time period, low-end manufacturing production moved to the special economic zones in southern China. Hong Kong played a pivotal role providing expertise, a legal environment and logistics in those early days when China was just beginning to develop these aspects of a business environment.

Unlike China in the 1980s, India had no such external impetus to push forward its FDI agenda. India's FDI has not been concentrated from any one nation or region. Some

studies have identified overseas Chinese as an important source of FDI into China (Gao, 2003, Lo & Liu 2009) whereas this has been more limited in India (Lall, 2001).¹¹ Saxenian (2002) emphasizes the linkages with nationals with specialized education and experience that allow the formation of global professional networks that promote new industries and innovations. Her study shows that these networks are more developed vis-à-vis China than India. These factors are consistent with East Asian companies taking advantage of new opportunities within China as a substantial portion of the FDI came from Hong Kong and Taiwan. Well over half of China's FDI has gone into manufacturing, while in India FDI has concentrated in the power and telecom sectors (Henley, 2004). The character of China's exports—the fact that over 50 percent of China's exports are produced by firms with foreign investment, that the value-added of these exports tended to start low and rise, and that final sales are heavily weighted towards the major developed markets of the north America and the E.U.—is evidence of China's role in the Asian production networks (Sung 2007, Lemoine and Unal-Kesenci 2004).

Consistent with this argument, Wu et al. (2006) argue that China's manufacturing cost advantage over other nations was not merely due to the low cost of labor but more so because of the existence of supply clusters and China's geographic proximity to these global production networks. They argue that if labor costs were the main reason, other nations such as Vietnam and Zimbabwe should have benefited, since they have far lower costs than China. They also point out that most of China's production capacity for export goods is located in the four or five eastern provinces in the coastal regions where wages and cost of living and prices for production are usually the highest in the country. The Chinese advantage goes beyond labor costs and is specifically reflected in the developed value chain, including sourcing for manufacturing, logistics, warehousing, and storage.

There has been nothing comparable in India until very recently. Over half of the FDI flowing to India is funneled via Mauritius (Wei 2005), but this is for tax purposes rather than for economic reasons. India began opening to global markets in earnest only in 1991. By then China had a decade of experience with how to best attract FDI with minimal political and economic backlash. This put China in a good position to absorb the rising private capital flows that occurred during the 1990s. With improving production quality and expanding clusters of capabilities with supporting services, China became an agglomeration of low cost manufacturing that then encouraged other firms to follow.

This was an historical moment for equipment manufacturing, especially in telecommunications and information technology, which most likely will not be replicated elsewhere.

China's trading and investment partners provide additional evidence to support the East Asian production networks proposition. China's exports in 1990 were heavily dependent on East Asia, with 61.9 percent being sold there (table 6). Hong Kong was the largest with 43.3 percent of China's export market share. Japan followed with 14.7 percent. Imports from East Asia made up 16.2 percent of the total, with Japan being the largest import partner at 14.2 percent. By 2008 East Asia's share had fallen to 29 percent for exports and 24.6 percent for imports. In line with this, Chia (2007) analyzed Japan's FDI to Asia noting that the largest flows went to China, outstripping flows to ASEAN4 plus Singapore, although ASEAN has caught up in 2006.

[Table 6 here]

In contrast, in 1990, India was still largely following the bilateral trade process with rudimentary building production networks, if any. As see in Table 6, 14.2 percent of India's exports were sold to Japan and Hong Kong, and another 1.7 percent went to Singapore. The U.S. was India's largest export destination with 15.1 percent. Exports to China represented only 0.1 percent. The U.S. was also India's top country for imports with 11.0 percent while East Asia made up 11.9 percent. By 2008, India's exports to East Asia were 21.6 percent, with 11.1 percent going to China. China was India's largest country for imports in 2008, with 11.9 percent. East Asia together represented 22.1 percent. The trends indicate that East Asia has grown in importance for India, but largely because of its growing trade with China.

Trade and foreign investment tend to be closely tied, and in recent years this has been compounded by the growing share of intermediate goods in total world trade (Hanson et al. 2005). While cross-border mergers and acquisitions (M&As) is only one mode of inward FDI, it provides evidence of a trend in both direction and magnitude of FDI. Data on the value of cross-border M&A transactions over the three decades is presented in table 7 showing that China received about two and half times more capital

via cross-border M&A transactions than India for the three decades (\$243 million as opposed to \$104 million). While none of the East Asian nations and Japan invested any M&A dollars in the 1980s with India, China received \$74 million; \$10 million from Japan and \$50 million from UK and \$2 million from HK. China received a large boost in capital of 453 times in value terms from the 1980s to the 1990s. This we argue made all the difference since it helped build China-centric production networks that moved East Asian trade to the forefront for the next two decades following the 1980s.

By the mid 1990s, as China began to expand and become increasingly more attractive as a location for global production networks, the push for cross-border M&As was welcomed in China. With the East Asian tigers and Japan, China's foreign invested export industry became a key driver of China's development. As reflected in the numbers, China's inward FDI in the form of cross-border M&As increased impressively from 73 million in the 1980s to 32 billion in the 1990s. The majority of this FDI was from East Asia, Japan and the U.S. For India, while the 1990s was also a period of liberalization, with limited production networks, India's cross-border M&A grew to \$5 billion in the 1990s, an increase of 60 times compared to the 1980s. However, the FDI in form of cross border M&As was not weighted toward one or a group of nations as in the case of China.

The 2000s also saw a further increase in cross-border M&A dollars into China but the pace slowed relative to the earlier decade and the differential between the two nations narrowed. While China continued to receive most of the M&A dollars from Hong Kong, U.S., Japan and Singapore, during this decade other nations also poured dollars via M&As into China. India saw a larger proportionate increase in the 2000s and grew about 19 fold from the 1990s to \$99 billion. As in other decades, India's M&A dollars were not concentrated from any one country or region. In sum, these trends underscore the importance of East Asian trade and investment in China's development story.

[Table 7 here]

Implications

This evidence of trade and FDI lend support for our hypothesis that China had the right combination of economic history and timing that enabled its building of alliances with other nations in the form of production networks. This process began a decade earlier than India positioning China as a better place to receive FDI. China's early entry into East Asian production networks was happenstance due to its geographical location, and while opening to the global economy by establishing special economic zones was a conscious policy, the timing of it was coincidental.¹² Together, the timing and location of building these alliances has been a key factor pushing China ahead of India in terms of FDI.

One view of this result is that while India's lower volume of FDI compared to China may not be worrisome in itself, FDI as a vehicle for technology transfer and a mechanism for accessing global markets provides an advantage in terms of market positioning. FDI helps tie local companies into international production networks that bring together component suppliers, assemblers, supply chain managers and buyers. Domestic firms can increase their productivity by accessing technology and management practices from foreign partners, which enhances their international competitiveness (Ernest and Kim 2002). A recent contribution to this line of reasoning is Breznitz and Murphee (2011) who argue that China's process innovation capability is due to just these types of connections to global firms. Following our argument, India would not have the same innovation dynamics, at least in manufacturing.

Another view is that the now more developed India perhaps does not need FDI as a conduit to development as it might have in the past. An empirical study by Kose et al. (2007) suggests that emerging market economies have become less tied to the industrialized economies because they have been decoupling. In recent years India's former self-reliance resulting in a strong domestic sector seems to be paying off and its emphasis on 'homegrown' entrepreneurship is poised to become its key ingredient for economic success. India has managed to spawn a number of reputable companies able to compete internationally with the best of Europe and the United States. Many of these firms are in knowledge-based industries, such as software giants Infosys and Wipro and Ranbaxy and Dr Reddy's Labs in the pharmaceutical and biotechnology sectors, just to name a few. Further, for the emerging economies, intra-group trade became relatively more important than trade with industrial countries, while the group's economic

structures have become increasingly similar. Another recent paper by Kaur (2009) proposes that the statistical patterns of convergence and decoupling may be analogous to the flying geese pattern of shifting comparative advantage, with more advanced economies moving up in sophistication and passing the baton to other emerging economies. She argues that there is a change in the degree of vertical specialization in global production networks, with supply chain management now allowing different production stages to be spread across more locations. India's strength in services has created a competitive advantage in the coordination of these activities across firms and across nations (Ghani, Grover and Kharas 2011).

Decoupling has also received a lot of attention with respect to China in the wake of the 2008-09 global financial crisis. If China can grow without the U.S., in particular, then China can be instrumental in pulling the U.S., and the global economy, out of recession. Much discussion has focused on the need for China to shift to domestic demand as its engine of growth with less reliance on exports, especially after the decline in demand from the developed economies in the wake of the crisis (e.g., Qi and Prime 2009). Official policy in China recognizes this as a goal, and steps have been taken. To date, however, China's exports continue to grow, as does its foreign exchange reserves. India is much less reliant on the global economy for its growth, and hence has weathered the crisis well.

By the 2000s, the FDI differential between China and India continued but inward investment to India increased quickly (Table 1). Over the decade India's economy increasingly integrated with the East Asian economies, giving it some of the advantages that China has enjoyed for some time. Infrastructure has improved in India, but more needs to be done. Perhaps now the pressure to invest in infrastructure will be sufficient to ease these constraints. India's higher growth has stimulated rising incomes there with new domestic market opportunities for domestic and foreign firms alike.

As the two nations grow and knowledge transfer diffuses into these economies, one can expect new symbiotic relationships with other nations in the new age of strategic alliances. For example, Japan has begun to view India as a place with substantial investment and manufacturing potential. Due to very limited political and economic history with India, Japan's latest approach to India has so far also been reciprocated and well-received by Indian businesses that have traditionally been looking west. India's increased trade with Japan, and East Asia generally, in part reflects this new direction of

global ties. Secondly, China's FDI structure is likely to change as its networks evolve. It may be, for example, that the next stage of global production will see some FDI leaving China because of rising costs, and more FDI going to India to take advantage of India's high-skilled knowledge workers. Thirdly, companies from both countries have become multinationals in their own right, investing in many markets around the world. Finally, at the same time, India and China are becoming closer economically, with China representing India's largest import market and the second largest export market in 2008. How policies change in these two nations' as they go forward with cooperation while also competing remains to be seen.

Conclusion

This paper identifies reasons for the large differential in FDI received by China over India. The FDI differential is a puzzle since the two nations are geographically similar in that they are large, populous continental economies that have gone through similar stages of transition and development over the past three decades. We address this issue by identifying factors that attract FDI within the context of national competitiveness as laid out by Porter. We first examine the four parts of Porter's diamond. Differences are established but none of these four stands out as obvious explanations for such a large FDI differential.

We argue that the differential is largely due to China's fortuitous 'location and timing' that placed China in the center of the building of production networks with East Asian investment beginning in the early 1980s. Alongside, resolute government policy and programmatic initiatives adopted to promote business development in China (as opposed to India) helped strengthen China's competitiveness earlier and more successfully than India. A case in point is the establishment of the special economic zones in southern China in the early 1980s that provided incentives, labor and infrastructure for foreign firms to locate there for low-cost, labor-intensive manufacturing. Simultaneously, East Asian firms were central to the manufacturing supply chain, especially driven by electronic equipment, thus, moving to China was geographically and culturally convenient. This placed China in the center of the East Asian building production network; an opportunity that India missed at the time.

Our analysis covers the key conditions that are typically addressed in the literature, but we are limited by the lack of systematic econometric data that would allow

us to measure the relative importance of our variables. In this sense understanding the attractiveness of these two economies to FDI covers many “eclectic” reasons that Dunning described so well. In sum, China and India have developed in very different ways and so a systematic comparison will yield multiple reasons for differences in results. What is clear is that China has attracted and utilized much more FDI than India, and it seems unlikely that India will catch up in this respect, at least for some time to come. At this point we cannot say which path will be the most successful over the long-run.

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Table 1: Inward FDI flows: China and India 1970-2008 (US \$ millions)

YEAR	China	India	FDI Developing economies:		China as	China as	India as	
			Asia	World FDI	% of Developing Economies in Asia	% of World FDI	% of Developing Economies in Asia	India as % of World FDI
1970	0	45	854	13,346	0.0	0.0	5.3	0.3
1971	0	48	796	14,282	0.0	0.0	6.0	0.3
1972	0	18	1,423	14,933	0.0	0.0	1.3	0.1
1973	0	38	1,648	20,646	0.0	0.0	2.3	0.2
1974	0	57	-1,665	24,127	0.0	0.0	-3.4	0.2
1975	0	85	5,265	26,567	0.0	0.0	1.6	0.3
1976	0	51	1,605	22,002	0.0	0.0	3.2	0.2
1977	0	-36	3,031	27,139	0.0	0.0	-1.2	-0.1
1978	0	18	3,919	34,358	0.0	0.0	0.5	0.1
1979	0	49	2,146	42,292	0.0	0.0	2.3	0.1
1980	57	79	543	54,076	10.5	0.1	14.6	0.1
1981	265	92	13,329	69,567	2.0	0.4	0.7	0.1
1982	430	72	17,136	58,059	2.5	0.7	0.4	0.1
1983	916	6	10,894	50,268	8.4	1.8	0.1	0.0
1984	1,419	19	11,557	56,839	12.3	2.5	0.2	0.0
1985	1,956	106	5,419	55,887	36.1	3.5	2.0	0.2
1986	2,244	118	9,299	86,345	24.1	2.6	1.3	0.1
1987	2,314	212	13,426	136,548	17.2	1.7	1.6	0.2
1988	3,194	91	18,058	162,834	17.7	2.0	0.5	0.1
1989	3,393	252	16,992	196,617	20.0	1.7	1.5	0.1
1990	3,487	237	22,660	207,273	15.4	1.7	1.0	0.1
1991	4,366	75	24,164	155,686	18.1	2.8	0.3	0.0
1992	11,008	252	32,956	166,594	33.4	6.6	0.8	0.2
1993	27,515	532	56,022	222,408	49.1	12.4	0.9	0.2
1994	33,767	974	68,289	256,785	49.4	13.1	1.4	0.4
1995	37,521	2,151	80,114	341,144	46.8	11.0	2.7	0.6
1996	41,726	2,525	94,186	390,443	44.3	10.7	2.7	0.6
1997	45,257	3,619	105,814	485,808	42.8	9.3	3.4	0.7
1998	45,463	2,633	95,302	705,330	47.7	6.4	2.8	0.4
1999	40,319	2,168	111,537	1,078,606	36.1	3.7	1.9	0.2
2000	40,715	3,585	148,561	1,381,675	27.4	2.9	2.4	0.3
2001	46,878	5,472	113,936	820,430	41.1	5.7	4.8	0.7
2002	52,743	5,627	101,185	629,675	52.1	8.4	5.6	0.9
2003	53,505	4,323	116,928	565,160	45.8	9.5	3.7	0.8
2004	60,630	5,771	172,910	734,892	35.1	8.3	3.3	0.8
2005	72,406	7,606	213,751	973,329	33.9	7.4	3.6	0.8
2006	72,715	20,336	282,127	1,461,074	25.8	5.0	7.2	1.4
2007	83,521	25,127	331,425	1,978,838	25.2	4.2	7.6	1.3
2008	108,312	41,554	387,828	1,697,353	27.9	6.4	10.7	2.4
2009	95,000	34613	301367	1114189	31.5	8.5	11.5	3.1

Source: UNCTAD, WIR 2009

Table 2: FDI performance Index

Year	Inward FDI Performance Index		Inward FDI Potential Index	
	China scores	India scores	China scores	India scores
1988-1990	1.033	0.066	0.176	0.120
1990-1992	2.162	0.088	0.196	0.138
1992-1994	2.162	0.088	0.190	0.152
1994-1996	4.667	0.467	0.225	0.165
1996-1998	2.761	0.417	0.251	0.167
1998-2000	1.198	0.155	0.255	0.156
2000-2002	1.331	0.215	0.273	0.159
2002-2004	2.134	0.410	0.289	0.166
2004-2006	1.320	0.615	0.304	0.163
2005-2007	0.986	0.629	0.304	0.163

Source: UNCTAD, 2008

Table 3: Telecommunications infrastructure

Country	Electric power consumption (kWh per capita) 2006	Internet access to information	Internet users (per 100 people) 2008	User growth (2000-2008)	Users (%) in Asia	Penetration (%) (Population)	Personal computers (per 100 people) 2006	Accessibility of digital content	Internet bandwidth (hard data)	Cellular (in millions)	Mobile phone subscribers (per 100 people) 2008	Main lines in use (in millions)
China	2041	controlled	16	12.244	0.453	0.224	5.6	5.53	4.79	547.286 (2007)	42	365.4 (2007)
India	503	open	7	15.2	0.123	0.071	3	4.5	0.31	362.3 (2009)	21	37.75 (2009)

Source: UNCTAD, 2008, Internet World Stats, 2008, Global Information Forum, 2009

Table 4: Transportation infrastructure

	Airports	Airports with paved runways	Heliports	Railways	Roadways	Ports and terminals ¹
China (2008)	477	413	35	75,438 km	1,930,544 km (2005)	16 major and about 130 open to foreign ships
China (2010)	502	502	48	77,834 km	3,583,715 km (2007)	
India (2008)	345	251	30	63,221 km	3,316,452 km (2006)	12 major and 187 minor and intermediate
India (2010)	352	249	40	64,015 km	3,3320,410 km (2009)	

Source: CIA World Fact book, 2008, 2010;

1: Wikipedia http://en.wikipedia.org/wiki/Ports_in_India/;

http://en.wikipedia.org/wiki/Transportation_in_the_People%27s_Republic_of_China

Table 5: Firm Entry constraints

Country	% of Firms Identifying Business Licensing and Permits as Major Constraint***	% of Firms Expected to Pay Informal Payment to Public Officials (to Get Things Done)	% of Firms Expected to Give Gifts to Get an Operating License	% of Firms Expected to Give Gifts to Get an Import License	% of Firms Expected to Give Gifts to Get an Electrical Connection	% of Firms Expected to Give Gifts to Get a Phone Connection
All countries	15.4	27.1	16.2	15.7	16.9	11.7
East Asia & Pacific	10.3	31.1	20.7	20.6	21.6	11.6
OECD	9.7	12.6
South Asia	11.9	34.7	20.7	20.5	31.9	22.7
China	21.33	72.57	8.49	10.9	5.61	5.51
India	9.92	47.49	52.45	45.99	39.63	20

Country	Incidence of Graft index	% of Firms Expected to Give Gifts In Meetings With Tax Officials	% of Firms Expected to Give Gifts to Secure a Government Contract**	Value of Gift Expected to Secure Government Contract (% of Contract)	% of Firms Identifying Corruption as a Major Constraint***	% of Firms expressing that a Typical Firm Reports less than 100% of Sales for Tax Purposes
All countries	14.8	16.7	28.5	2.3	36.1	53
East Asia & Pacific	20.8	22	34.6	4.1	26.6	63.8
OECD	..	28.3	15.6	0.4	8.1	36.2
South Asia	23.2	30.6	31.4	1.5	33.8	36.3
China	8.38	38.74	27.04	1.25	27.33	49.45
India	36.57	52.32	23.79	0.96	25.65	59.24

Source: World Bank enterprise surveys

Table 6: Export and Import statistics

	China	India
Exports	\$1.485 trillion f.o.b. (2008)	\$187.3 billion f.o.b. (2008)
Exports of Commodities	Electrical and other machinery, including data processing equipment, apparel, textiles, iron and steel, optical and medical equipment	Petroleum products, textile goods, gems and jewelry, engineering goods, chemicals, leather manufactures
Export partners 1990	Hong Kong (43.3%); Japan (14.7%); U.S. (8.5%); Germany (3.3%); Singapore (3.2%); Korea (0.7%)	U.S. (15.1%); Japan (9.3%); Germany (7.6%); U.K. (6.2%); Hong Kong (3.1%); Italy (2.8%); UAE (2.6%); PRC (0.1%)
Export partners 2008	U.S. (18.4%); Hong Kong (13.6%); Japan (8.1%); Korea (5.1%); Germany (4.1%)	U.S. (13.1%); PRC (11.1%); UAE (8.9%); Singapore (4.3%); Hong Kong (3.7%); U.K. (3.7%)
Imports	\$1.191 trillion f.o.b. (2008)	\$299.4 billion f.o.b. (2008)
Imports of Commodities	Electrical and other machinery, oil and mineral fuels, optical and medical equipment, metal ores, plastics, organic chemicals	Crude oil, machinery, gems, fertilizer, chemicals
Imports Partners 1990	Japan (14.2%); U.S. (12.2%); Germany (5.5%); Australia (2.5%); Singapore (1.6%); Malaysia (1.6%)	U.S. (11.0%); Germany (7.7%); Japan (7.5%); U.K. (6.9%); UAE (4.0%); Australia (3.2%); Singapore (2.9%)
Import Partners 2008	Japan (12.5%); Korea (10.2%); U.S. (6.8%); Germany (4.6%); Australia (3.1%); Malaysia (2.9%)	PRC (11.9%); U.S. (6.9%); Singapore (4.5%); Germany (4.4%); Australia (4.0%); Japan (2.9%); UAE (2.9%); Korea (2.8%)

Source: CIA World Fact book for major traded commodities and Asia Development Bank, www.adb.org/statistics, for trade partners and trade totals for 2008.

Table 7: Value of Cross Border Mergers and Acquisition Transactions (\$ millions)

INDIA 1985-2009					CHINA 1983-2009				
Country of Origin	Total 1980s	Total 1990s	Total 2000s	Grand Total 1980-2009	Country of Origin	Total 1980s	Total 1990s	Total 2000s	Grand Total 1980-2009
Australia		63	468	531	Australia		416	2,990	3,405
Bahrain		2	379	381	Belgium		2	1,158	1,159
Belgium		1	188	189	Canada		266	1,551	1,817
Canada		104	95	199	France		4	3,076	3,079
China		25	8	32	Germany		23	3,091	3,114
Denmark		11	102	113	Hong Kong	2	24,008	101,274	125,284
Finland		13	110	123	Japan	10	583	5,283	5,877
France		184	2,762	2,946	Luxembourg		-	1,842	1,842
Germany		362	1,694	2,056	Malaysia		610	1,355	1,965
Hong Kong		364	1,340	1,705	Netherlands		34	1,337	1,372
Italy		246	524	770	Other	10	1,512	7,901	9,423
Japan		130	9,147	9,277	Singapore		1,598	16,188	17,786
Malaysia		34	5,150	5,185	South Korea		9	3,631	3,640
Mauritius		146	7,187	7,334	Spain		5	2,338	2,343
Netherlands		35	1,211	1,246	Switzerland		183	973	1,156
Singapore		248	6,041	6,289	Taiwan		58	1,779	1,836
South Africa		2	8,843	8,845	United Kingdom	50	617	10,177	10,844
South Korea		91	62	153	United States		3,046	43,809	46,855
Supranational	34	353	213	600	Total	73	32,973	209,752	242,797
Sweden		69	492	562	China	1	10,172	352,515	362,689
Switzerland		59	1,215	1,273	Grand Total	74	43,145	562,267	605,486
Taiwan			44	44					
Thailand		17	46	62					
United Kingdom	51	440	25,112	25,603					
United States		1,854	19,282	21,136					
Unknown		111	345	456					
Other		77	6,960	7,036					
TOTAL	84	5,039	99,022	104,145					
India	216	9,734	104,600	114,550					
Grand Total	300	14,773	203,622	218,695					

Source: Thomson SDC International Mergers and Acquisitions Database 2010.

Endnotes

¹ See Prime (2009) for a review of the literature comparing China and India in terms of economic performance.

² Along similar lines, G.P. Hinduja, President of the Hinduja Group when asked about the lack of investment by expats in India, stated unequivocally that the general lack of interest in manufacturing units in India by Non Resident Indians (NRIs) is because of bureaucratic hurdles and the lack of transparency and accountability at all levels. In addition, he noted that the NRIs are not provided the same infrastructure and network that local industrialists enjoy (<http://archives.digitaltoday.in/businesstoday/netexcl/netex2106/hinduja.htm>).

³ The eight variables that are included are: rate of GDP growth, per capita GDP, share of exports in GDP, telephone lines per 1,000 inhabitants, commercial energy use per capita, share of R&D expenditures in gross national income, share of tertiary students in the population and political and commercial country risk.

⁴ In order to compare these indices more systematically, a simple t-test of difference in means and a Wilcoxin test of medians of the rankings and scores of the indices was done on the data in table 2. These results confirm that China has had statistically significant differences in inward FDI performance and potential compared to India.

⁵ At least one estimate published in 2007 had India's wages a bit higher at \$1.60 per hour compared with \$1.50 in China (KPMG report cited in note 4, Gereffi & Guler 2010).

⁶ A recent paper by Thursby and Thursby (2006) presents results from over 200 multinational companies across 15 industries regarding the factors that influence decisions on where to conduct research and Development (R&D). They note that for companies locating in emerging economies, the most important attraction was the growth potential in the market followed by the quality of R&D personnel. Poor quality of intellectual property protection was a detractor.

⁷ Source: UNCTAD, based on information from OCO Consulting, LOCO monitor website (www.locomonitor.com). Note that these investments include new (Greenfield) and expansion FDI projects, both announced and realized.

⁸ Horizontal clusters are characterized by units which process the raw material to produce and subsequently market the finished product themselves. Vertical clusters are where the operations required in producing the finished product are carried out separately by different units, most of which are SMEs.

⁹ For examples of such clusters in India, see UNIDO at <http://www.unido.org/index.php?id=o4308>

¹⁰ In a search of journal articles in the EconLit database since 1989 for the words "production networks" in the abstract, out of the 218 items found only three had any reference to India. Most focused on China, Taiwan and East Asia generally, while a few dealt with Eastern Europe, the EU and the U.S. A recent book deals with labor and production networks in India, but the focus is on the effect of global production networks on wages and working conditions within connected firms in India (Posthuma and Nathan 2010).

¹¹ While Lo and Liu (2009) argue that without overseas Chinese investments, China's FDI-GDP ratio is almost the same as that of India on average in the 1990s (Lo and Liu, 2007, page 244), there are two things to note. One is that a majority of these overseas Chinese were from Hong Kong and Taiwan and second, the data reported by Lo and Liu is post 1991. Our argument here is that that the initial flows of FDI that China received in the 1980s due to 'location and timing' (chance) resulted in a snowball effect leading to more FDI in the 1990s, regardless of the source of the FDI.

¹² It should also be noted that the establishment of the special economic zones was a very controversial policy within the Chinese central government at the time, and objections continued until at least 1992 when Deng Xiaoping visited them for the first time and gave his public approval to the zones and the strategy behind them.