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ABSTRACT

The objective of this paper is to assess the role of FDI in China's economic development with reference to the broader literature on FDI and late development. Three main findings come out from the analyses in the paper. First, it is found that FDI tends to promote the improvement in allocative efficiency, while having a negative impact on productive efficiency. Second, insofar as FDI does promote overall productivity growth, this tends to be a matter of cumulative causation rather than one of single-direction causation. Third, in the context of a comparative analysis of two distinctive regional models, it is found that the economic impact of FDI tends to be more favourable in the inward-looking, capital-deepening pattern of development (the 'Shanghai model') than that in the export-oriented, labour-intensive pattern (the 'Guangdong model'). Further analyses, however, suggest that the 'Shanghai model' has its intrinsic problems of sustainability. The scope for applying it to China as a whole is thus judged to be limited.

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1. Introduction

China has been amongst the world's largest recipient countries of foreign direct investment (FDI) since the early 1990s. In 2002, the first year after the country's accession to the World Trade Organisation, it for the first time surpassed the USA to become the world's largest FDI-recipient – with the actual amount of FDI accounting for around 10% of the world total. Concerned analysts generally predict that further increases in FDI in China are most likely in the years to come, amid the increasing integration of the country into the world market. Thus, proper assessments of the role FDI has played in China's economic development are clearly of widespread policy importance.

Such assessments are of intellectual significance, too. For, despite all its specificity or even uniqueness, China's experience in utilising foreign direct investment provides an important case for testing the efficacy of contrasting intellectual views on the role of foreign capital in late development in general. It is also well known that recent debates over the developmental implications of the process of globalisation in the world economy in the 1980s and 1990s have to a significant extent focused on the interpretations of the Chinese experience.

Existing studies on the role of FDI in China's economic development have broadly followed two analytical approaches. One approach is to express various measurements of FDI as ratios to main macroeconomic indicators – gross domestic product (GDP), gross fixed capital formation, total exports, etc. – and thereby to infer about the overall contribution of FDI to economic growth. A second approach is to carry out regression analyses of the relationship between various measurements of FDI and indicators of economic development, including both observed indicators such as GDP growth and unobserved indicators such as total factor productivity (TFP) growth. This second approach has been applied to both analyses at the aggregate level and, even more popularly, comparative studies across sectors or regions.

We believe these existing studies, while offering valuable insights, are still far from adequate for producing a definitive account in interpreting and assessing China's experience. At one level, with respect to the broader literature on globalisation and late development, the two analytical approaches appear to be excessively narrow in focus. They tend to centre around propositions and hypotheses framed according to mainstream neoclassical economics, while ignoring the important contribution from alternative theoretical traditions. At another level, even within the confine of the mainstream propositions and hypotheses, a range of difficulties in applied analysis appear to have remained for the existing studies to cope with. In particular, in the analyses of the relationship between FDI and China's economic development, both of the two approaches have had difficulty in differentiating between correlation and causation. What is conspicuously inadequate in the existing studies is the identification of the concrete channels or mechanisms through which FDI impacts on the economic development of China as a whole as well as on particular sectors and regions. Thus, both for addressing the concerns of the broader literature on globalisation and for verifying the mainstream propositions and hypotheses, the interpretation and assessment of the impact of FDI in China must be analysed in relation to China's particular paths or patterns of economic development.

The contribution of this paper is intended to be two-fold. First, we offer a review of the main features of FDI in China, at both the aggregate and sectoral levels, with a view of producing an overall picture of the experience. This is essential not only for any proper assessment but also for evaluating the established theoretical views on FDI and late development. Second, we aim to deepen our analyses by examining two contrasting patterns of FDI and regional development – what we call the 'Guangdong model' and the 'Shanghai model' – the two regions being China's main centres of FDI utilisation. In both cases, our ambition is to relate the analyses to China's particular paths or patterns of economic development, in the belief that this will offer new insights for understanding the complex experience.

This paper is organised as follows. The next section will briefly review relevant theoretical issues and the literature of applied studies on China's experience. Section three then examines main features of FDI in China in the light of the preceding literature surveys. Section four turns to examine the scales, operations and performance of foreign capital-funded enterprises in Guangdong province and in Shanghai and nearby regions, again in the light of established theoretical propositions and hypotheses. Section five gives a discussion on the developmental significance of the empirical observations provided in the previous two sections. Section six concludes the paper.

2. Conceptual Issues and Existing Studies

There exists a vast literature on FDI and late development in the world economy. Broadly speaking, three established theoretical traditions, each of which comprising a range of analytical propositions, are discernible. And the propositions are based on either theoretical arguments or generalised empirical observations, or both (for elaborate reviews on these theoretical traditions, see, e.g., Hirst and Thompson [1999], Lo [1995], Saggi [2002], and UNCTAD [1995] and [1999]).

The first tradition, generally considered to be the mainstream for its association with major international agencies (especially the World Bank and other 'Washington institutions'), is largely based on neoclassical economics. Its views on the role of FDI in late development comprise the following main propositions: first, FDI represents the availability of additional financial resources, over and above domestic savings; second, FDI represents the availability of additional foreign exchange, over and above the export earnings of domestic firms; and, third, FDI could promote productivity change in the recipient economy via technology transfer (inclusive of the transfer of managerial practices and knowledge of the world market) and structural/institutional change. The first proposition is standard neoclassical economics. The second proposition is derived from some 'gap' models, where the assumption is that there

exist certain produced goods that are essential to economic development but are not readily available from domestic producers. And the third proposition is broadly associated with the notion of best practices as defined in the production function, and ultimately determined by competition in the world market. The productivity growth could arise from moving towards the production frontiers, or, as some theories of endogenous growth tend to emphasise, realising static and/or dynamic increasing returns.

The second tradition, known as structuralist development economics in the literature, while not necessarily opposing the above propositions, tends to highlight two critical drawbacks of FDI. The first one can be summarised as 'competition kills'. Especially where the carrier of FDI is transnational corporations (TNCs), which typically have technological and scale advantages over domestic firms, a main impact of FDI is likely to be the extension of the monopolistic power of these foreign firms into the domestic market. The second one can be summarised as 'competition distorts'. Again, especially where the carrier of FDI is TNCs, which typically have acute competition among themselves in the world market, a main impact of FDI is likely to be the distortion of the economic structure of the recipient country – in the forms of excessive duplication of industrial projects, fragmentation of the structures of industries, and obstruction to the development of linked upstream capital-intensive industries. At one level, both of the two propositions are an application of established theories of industrial organisation to this particular field. At a more substantive level, the application is hinged on the further proposition that, in the world market, most dynamic (fast productivity-growing) industries are characterised by imperfect competition and the predominance of a small number of TNCs in each of them.

The third tradition, known as radical political economy, encompasses a wide range of diverse views of which two groups have been most influential. One group of views have coalesced around the thesis of the 'new international division of labour', which posits that de-skilling is the likely outcome of the division of labour under modern capitalism (the 'Taylorisation' of

work) and that capital export from advanced countries tends to be motivated by the pursuit of cheap labour. The logical expectation, in these views, is that such capital tends to perpetuate the position of the recipient late developing countries in specialising in low technology/skill production and getting low income for workers – a development trap that is difficult to escape. Meanwhile, another group of views centre around the idea of the 'internationalisation of (the contradictions of) capital'. It is posited that capital export from advanced countries is typically motivated by demand deficiency and/or falling profitability in the home market, and, by helping to create new centres of production in developing countries, it tends to result in over-accumulation on an expanded scale. Consequently, by receiving such foreign capital as a means of integrating themselves into the world market, late developing countries will often have to bear the brunt of severe fluctuations in the world economy – so much so that any developmental achievements they have made are constantly threatened to evaporate.

It must be stressed that the propositions pertaining to the different theoretical traditions as outlined above, while carrying ideological contents in their own right, are clearly of important analytical insights. The intellectual contribution of these propositions, which entail asking different questions and/or offering different answers, could be evaluated from the standpoint of economic development. They should thus be treated as analytics rather than just doctrines of belief, and their validity or otherwise is ultimately an empirical issue. It is with reference to this broader theoretical literature that the strength and limitation of existing studies on FDI and China's economic development can be properly assessed.

Existing studies on the topic have, almost exclusively, followed the mainstream tradition – in the sense that they hold the assumption that FDI represents a net addition in financial and/or technological resources for recipient economies. Two main approaches have been adopted for such analyses. The first approach is simply to express various measurements of FDI as ratios to main indicators of economic aggregates, and thereby to 'read out' the contribution of FDI to economic development. It is found that the ratio of FDI flows to China's GDP, or gross

fixed capital formation, was quite small in the 1980s but has become quite large – by international standard – since the early 1990s. It is also found that, of China's rapidly expanding total exports, the share accounted for by foreign capital-invested enterprises (FIEs) has risen very sharply. And, for both indicators, the impact of FDI is found to be particularly pronounced in fast-growing coastal provinces or regions (Chen *et al.* [1995]; Kaiser *et al.* [1996]; Lardy [1995]; Zhang and Song [2000]).

The second, complementary approach is to carry out regression analyses of the relationship between various measurements of FDI and indicators of economic development. This is intended both to examine the indirect impact of FDI on observed development indicators such as GDP growth, which does not show out in the analyses of the first approach, and to capture the impact on unobserved indicators such as TFP growth. Findings of these analyses vary, depending on the specification of the models used for estimation, but it is generally found that the indicated correlations are positive and significant. Perhaps the most optimistic finding is that, in the 1990s, FDI has raised China's TFP growth by 2.5 percentage points. Together with the effect of raising GDP growth by 0.4 percentage points via its addition to capital formation, the total contribution of FDI to China's economic growth over the 1990s is estimated to be near three percentage points per annum – that is, almost one-third of the total (Tseng and Zebregs [2002]). Meanwhile, other studies have found that FDI flows have been positively and significantly correlated with investment growth, and this has been interpreted as evidence of the existence of an investment crowding-in effect (Kueh [1992]; Zhan [1993]).

More recently, a practice that is in the spirit of the second approach has become very popular among concerned scholars. This, namely, is to carry out analyses of the correlation between FDI and local-level economic growth – for individual regions or for cross-region comparison. The motivation is the easily observed fact that regions or provinces with a higher FDI intake have tended to exhibit faster economic growth. And the analyses typically find that these two sides are positively and significantly correlated, and that FDI contributes to local economic

growth via various kinds of direct or indirect impact including the addition to local capital formation, the crowding-in of local investment, and the enhancement or efficient utilisation of the local stock of productive skill/knowledge. Inferences have thereby been made that FDI does explain the diverse growth performance across regions or provinces, and that this holds important policy lessons for China as a whole (Berthélemy and Démurger [2000]; Mody and Wang [1997]; Wei [1994]; Wei *et al.* [2001]; Zhang and Felmingham [2002]).

It is particularly at this point that the limitation of the existing studies has also become clear. This, namely, is the difficulty of differentiating between relationships of causation and those of correlation. This is a problem that runs through all the existing studies, but it is particularly serious in the regional or cross-regional regression analyses. For the regions being analysed are after all within the same country, under the same system (i.e., interrelated institutional and policy regimes) and using the same currency, which all imply ample possibilities for rent-making as a source of local economic growth. Thus, even if it is found that FDI is correlated with local economic growth, it is not clear whether this is underpinned by income transfer from the rest of the country or by truly productivity improvement in the local economy – both being possible outcomes of FDI flows, especially in the context of differentiated degrees of marketisation across regions. Conversely, in the extreme circumstance where the rent-making attributes outweigh those of productivity enhancement, the net outcome of FDI might well be a negative instead of positive contribution to the economic development of the country as a whole.

The general point from the preceding discussion is that the indicated possible problem would simply be overlooked or ignored by the kinds of regression analysis that is typical of existing studies – including those using simultaneous-equation estimation or the method of Granger-causality test to analyse the relationship between FDI and local economic growth. The problem as indicated is not about FDI flows causing growth and/or growth causing FDI flows. It is about whether FDI generates growth through rents or through productivity improvement..

Thus, it is only by linking up the analysis with China's particular paths or patterns of economic development that the precise mechanisms through which FDI impacts on the economy can be properly identified, and the impact can be properly assessed.

The need to link up the analysis of the impact of FDI with the particular development paths of the economy is also logically related to the insights offered by the other two traditions in the boarder theoretical literature. Both traditions place emphasis on a range of additional factors that are considered to be crucial in determining the net impact of FDI. These include the mode of entry of foreign firms into the domestic market, the kind of technology being transferred, the institutional and structural conditions that shape the patterns of competition in the domestic market, etc. Existing studies on China, as mentioned, have mostly ignored these concerns. A notable exception, though, has carried out a firm-level analysis that is in the spirit of testing the structuralist propositions that competition kills/distorts. And the finding is rather interesting: that the impact of FDI on the output and productivity change of domestic firms varies across industries, and between the short run and the long run (Hu and Jefferson [2002]). Whilst the general importance of this particular case study is a matter requiring exploration, it can be said that works of this kind indicate exactly the importance of identifying the specific mechanisms through which FDI impacts on the economy.

3. Macro Indicators and Sector-Level Evidence

Prima facie, immediate macroeconomic indicators do not support the view that FDI has been an important factor in China's overall economic development. As a ratio to gross fixed capital formation, FDI flows were of rather small magnitudes from 1979 to 1991 (Figure 1). Massive increases do have occurred from 1992, with the ratio averaging to around 14% for ten years until 2001. This ratio is roughly twice as large the average for all developing countries. Nevertheless, because they were only a fraction of gross fixed capital formation, and the latter was in turn only a fraction of GDP, FDI flows could not account for a significant part of

China' economic growth – the contribution to GDP growth was unlikely to have exceeded one percentage point a year over the 1990s (all data in this paper are from *Zhongguo Tongji Nianjian* [China Statistical Yearbook], various issues, unless indicated otherwise).

[Figure 1]

Three points can be raised regarding the limitation of the above indicator: first, that figures of FDI flows do not reflect the full addition of FDI to capital formation because there are also investment by foreign capital-invested enterprises (FIEs) using retained profits, second, that the ratio of FDI flows to capital formation does not capture the possible indirect investment crowding-in effect, and, third, that the ratio also dos not show the unobserved impact of FDI in raising the TFP of the economy. To verify the first point requires firm-level investigations, which cannot be done at this stage because the data are not available. Intuitively, however, a judgement can be made that, given the limited scale of FDI flows before the mid-1990s (and hence the fact that as of 1994 FIEs accounted for only 11% of the industrial value-added of all enterprises), it could only be a recent phenomenon that retained profits become a significant source of funds for investment by FIEs. Similarly, for the second point, given the well-known fact that until the mid-1990s the reformed Chinese economic system and the economic agents typically exhibited the incentive to over invest, any possible crowding-in effect brought about by FDI was likely to be significant only in recent years. Thus, there remains the third point, regarding the possible contribution of FDI to TFP growth (via technology transfer, promotion of institutional change, etc.), which is also the focus of existing studies.

Conceptually, the possible contribution of FDI to TFP growth could manifest itself through two main channels: the generation of export earnings, and the improvement of the efficiency of FDI-receiving firms and industries. Export earnings are important because they could be used to finance technology imports, not least in the embodied form of machinery and/or industrial inputs. On this count, again, Chinese data do not appear to be clearly supportive of the mainstream view. True that FIEs have accounted for a rapidly expanding share of China's

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total exports, exceeding 40% from 1996 and 50% from 2001. Yet, as can be seen from Table 1, it is also true that FIEs have accounted for an even larger share of total imports. For 13 years from 1985 to 1997, FIEs ran a sizeable foreign trade deficit every year, quite in contrast to China's overall trade surplus for most years after 1989. And, although FIEs have enjoyed trade surplus every year from 1998, such surplus has accounted for only a rather minor part of the national total. It is, of course, noted that parts of the imports by FIEs are production equipment which they bring along with their investment. The possible contribution to TFP growth in this regard then comes down to two forms: technology transfer to FDI-receiving firms which use the imported equipment, and the potential for FIEs to become net exporters over the long term – the latter possible contribution, as noted, has yet to be really materialised to date.

[Table 1]

According to mainstream theories, the possible contribution of FIEs to TFP growth could take various forms: technology transfer to FDI-receiving firms, spillover effects on other firms of the same industries and/or of linked industries, the promotion of structural change of the economy in the direction of following its 'endowed' comparative advantage, the promotion of institutional change in the direction of following the principles of the market, etc. Whether or not these theoretical views are valid, and whether or not some or all of such benefits are present, the net effect will show up in the relative performance of the industries concerned. Table 2 presents some useful data for the top 15 industrial sectors (out of a total of 40 sectors) ranked according to the value-added share of FIEs in 2001, which reflects the cumulative effects of FDI flows and FIEs operations in each of the particular sectors over the previous years. The reason for selecting 15 sectors for analysis is that these were the sectors with an above-average share of industrial value-added in 2001. And the reason for setting the 'cut-off' year at 2001 is that this allows for the analysis of the cumulative impact of FDI on Chinese industry prior to the WTO accession of the country. Three points are of note from the table.

[Table 2]

The first point concerns the possible impact of FDI in improving allocative efficiency. It is likely the expectation of the mainstream views that FDI would help to bring Chinese industry to specialise in accordance with its comparative advantage – that is, to specialise mostly in labour-intensive industries. As is customary in the literature of trade analysis, industries that are with relative labour productivity lower than the value of 0.9 are usually characterised as labour intensive. On this count, the picture appears to be mixed. Looking at the data of per worker value-added of sectors relative to Chinese industry as a whole in the three year-points, it is noted that 10 out of the 15 sectors could be characterised as labour intensive in 1980, and this remained basically the same in 1991 and 2001. The data thus broadly, but not clearly, confirm the mainstream expectation. The exceptions to this expected effect of FDI, both in the periods 1980-1991 and 1991-2001, are electronics, electrical equipment, transport equipment, beverage, and food industries. It appears that FDI has been drawn into these sectors mainly because of dynamic factors, i.e., the potential for rapid productivity growth and/or demand-side considerations, rather than the factors related to allocative efficiency. Conversely, the possible existence of important dynamic factors implies the need to investigate the particular paths of development of the industries, where imperfect competition in line with structuralist theories becomes a real possibility (Lo and Chan [1998] provides a relevant study on the broad machinery industry, which encompasses the first three of these five exception sectors).

The second point concerns the possible impact of FDI in enhancing labour skills. This could be gauged by looking at the changes in relative labour productivity of sectors in the two periods. Note that, because it is labour productivity of sectors relative to Chinese industry as a whole, the indicator has excluded the effect of economy-wide factors and tends to single out the effect of industry-specific factors including the above-average degree of presence of FIEs. Again, the data present a mixed picture. There were 10 sectors in the 1980-91 period, and 9 sectors in the 1991-2001 period, that exhibited an increase in relative labour productivity. The picture thus broadly, though not clearly, confirm the mainstream view of FDI enhancing

labour skills. Nevertheless, it is noted that the five afore-mentioned exception sectors carry an important weight in the relative labour productivity improving group, with electronics and transport equipment exhibiting the biggest improvement. If it is indeed the case that the development of these five sectors has been driven mainly by dynamic factors, rather than allocative efficiency, the mainstream argument would then be significantly weakened.

The third point concerns the possible impact of FDI in promoting total factor productivity growth. Again, in order to single out the impact of industry-specific factors, the indicator to be used is TFP of sector relative to that of Chinese industry as a whole. This is an overall indicator that could in principle capture the impact of technology transfer, horizontal or intra-sector spillover, the enhancement of market institutions, etc. Now, the results of analysis are even less supportive of the mainstream views than the previous two indicators. Both in the 1980-1991 and 1991-2001 periods, 8 out of the 15 sectors exhibited improvement in relative TFP. These results could not be said to be confirming the mainstream views and the finding of existing studies – that FDI plays a very important role in promoting TFP growth. The mainstream views are likely to be further weakened if it is noted that the five exception sectors, again, carry an important weigh in the relative TFP improving group.

Overall, the analysis in this section appears to indicate that the direct and observed impact of FDI on China's economic development is rather limited. FDI flows have not accounted for a sizeable share of gross fixed capital formation and hence of GDP. And the net export earnings of FIEs have been rather small in magnitude. Nevertheless, the same cannot be said to be true regarding the unobserved impact of FDI. As is revealed in the analysis associated with Table 2, FDI does have an impact on the relative productivity performance of industrial sectors. It is not at all clear, though, that the impact is as beneficial as the mainstream theory would suggest – it rather varies across sectors. From the analyses above, it could be said that there are broadly two groups of industrial sectors, which exhibit different outcomes with respect to the impact of FDI. Sectors that are clearly in line with China's (endowment-determined)

comparative advantage, i.e., sectors that could be characterised as labour intensive, tend to exhibit the tendency of de-skilling and have slower-than-average TFP growth. Sectors that are likely to have developed on the basis of dynamic factors, in contrast, tend to have faster-than-average labour productivity and TFP growth. The general point, then, is that insofar as FDI does have a positive and significant impact on productivity growth, it is likely to have been a matter of cumulative causation (i.e., interaction between FDI and dynamic factors internally generated by the Chinese economy) rather than of one-direction causation running from FDI to productivity growth.

4. Guangdong versus Shanghai: Expected and Anomalous Observations

A shortcoming with the sector analysis in the preceding section is that it does not capture the contribution of FDI to TFP growth via the effects of vertical or inter-sector technological spillover as well as those of promoting institutional change. Yet, these effects are considered to be important in existing studies that focus on the impact of FDI on local economic growth. Similarly, regarding the evaluation of the aggregate indicators, i.e., the ratio of FDI to gross fixed capital formation and the export earnings of FIEs, existing studies have found that they are important in accounting for the economic growth of particular provinces or regions.

In this section, both for addressing the above shortcoming and for deepening our analysis in the direction of identifying the mechanisms through which FDI impacts on the economy, we carry out a comparative study of two important regions in China. These two regions, namely, are Guangdong province and Shanghai municipality plus Jiangsu province. Guangdong has been a centre of China's economic development and systemic reform, particularly in terms of foreign trade and FDI utilisation, throughout the reform era. Similarly, the Shanghai-Jiangsu region has been the forerunner of China's economic transformation since the early 1990s. The data of the value-added of FIEs clearly indicate the importance of the two regions in the absorption of FDI. It is noted that, in the year 1993, Guangdong, as the 'first mover' in

China's integration into the world market, accounted for 34% of the national total of industrial value-added generated by FIEs, while the Shanghai-Jiangsu region had a share of 24%. By 2002, with the rapid catching-up of the Shanghai-Jiangsu region, its share of the national total of FIEs industrial value-added increased to 26%, while Guangdong's share decreased to 30%. Meanwhile, the importance of the two regions as China's centres of FDI utilisation can also be gauged by looking at the figures of industrial value-added share of FIEs in all enterprises. In 1993, the share was 29% for Guangdong and 12% for Shanghai-Jiangsu, compared with the national average of 8%. By 2002, the figures increased, in very substantial measures, to 58%, 39% and 26%, respectively. Clearly, the economic impact of FIEs (and hence of FDI) in the two regions must be much larger than the national average (data from *Zhongguo Gongye Jingji Tongji Nianjian* [China Industrial Economics Statistical Yearbook] 1994 and 2003, and the 2003 statistical communiqués of the three local governments).

Table 3 provides some key data regarding the trade and production characteristics of FIEs in the two regions. On the foreign trade side, it is conspicuous that Guangdong's FIEs have led the country as a whole in turning from deficit to surplus. And the province's surplus has persistently exceeded that of the national total, meaning that FIEs outside Guangdong have so far continued to run deficits in foreign trade. Shanghai-Jiangsu is precisely a region where FIEs have been running trade deficits, and the annual amount of deficits has tended to increase even when FIEs in China as a whole have turned to surplus since 1998. Meanwhile, turning to the production side, the contrast between the two regions are equally stark. Whilst the per worker value-added of FIEs in Guangdong is mostly below 0.9 times of the national average, that in Shanghai-Jiangsu is above 1.3 – meaning that production is, respectively, labour- and capital-intensive in the two regions. And the gap between the two regions has tended to widen, rather than narrow, over time. Taken together, the two characteristics appear to indicate that FIEs in Guangdong (and hence the entire economy of the province) fit into the well-known development pattern of export-oriented, labour-intensive industrialisation. In

contrast, the Shanghai-Jiangsu pattern appears to be an inward-looking one that pursues economic growth via capital deepening.

[Table 3]

The possible existence of a fundamental contrast between the two regional nexuses of FDI utilisation and economic growth offers scopes for making the analysis of the role of FDI more incisive than above. Conceptually, the main theoretical argument that comes out from the mainstream tradition for export-oriented labour-intensive industrialisation – relative to the inward-looking pattern – is that it helps to improve allocative efficiency and to drive the concerned firms to the production frontiers. And the counter argument, which comes out from the alternative traditions, is that such a development pattern could be detrimental to the improvement in productive efficiency, particularly via its effect of de-skilling labour and of obstructing the development of linked upstream capital-intensive industries. Thus, the overall outcome is dependent on the specific combination of these different types of efficiency, and is ultimately an empirical issue.

We use the same method of relative attribute analysis – that is, analysing the capital-intensity and productivity performance of FIEs-dominated sectors relative to the regional economy concerned, *not* to the comparing region or the national average – to examine the economic impact of FDI in the two regions. Table 4 presents the data for Guangdong, from which three points can be noted. First, using the criterion of relative labour productivity, only 6 out of the 15 FIEs-dominated sectors could be classified as labour-intensive in 1991, but the number increased to 10 by 2001. This change indicates that FIEs do have helped to improve allocative efficiency. Second, in terms of the change in relative labour productivity, the impact of FIEs in Guangdong appears to fit into the radical thesis of de-skilling: 11 out of the 15 sectors experienced a decrease in the measure between 1991 and 2001. This is in sharp contrast to the situation in China as a whole. Third, regarding the overall impact of FIEs, again, the figures of the change in relative TFP give a picture of Guangdong that is less favourable than the

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national total: only 6 out of the 15 sectors in the province experienced an increase in relative TFP during the 1991-2001 period.

[Table 4]

Turning to the case of Shanghai-Jiangsu, a rather different picture emerges from Table 5. First, whilst there were 12 labour-intensive sectors to start with in 1991, the number decreased to 9 by 2001. The implication is that the massive increase in the presence of FIEs does not appear to have helped to improve allocative efficiency. Second, however, there were 11 sectors that experienced an increase in relative labour productivity during this period. These two points imply that the Shanghai-Jiangsu pattern is just the mirror image of the Guangdong pattern. Finally, in terms of the change in relative TFP between 1991 and 2001, the situation in Shanghai-Jiangsu appears to be slightly more favourable than Guangdong: 8 out of the 15 FIEs-dominated sectors experience an increase.

[Table 5]

The analyses associated with Table 4 and Table 5 thus help to strengthen the inference made above concerning the difference between the two development patterns: whereas Guangdong has moved towards increasing the weight of labour-intensive industries, Shanghai-Jiangsu has moved towards capital-intensive ones. And along with such developments are allocative efficiency improvement cum de-skilling of labour in Guangdong, while Shanghai-Jiangsu appears to be on an opposite trend. The overall effect of the two development patterns in terms of the change in relative TFP, though, appears to be slightly more favourable in the Shanghai-Jiangsu case than in Guangdong.

Table 6 provides a further piece of evidence in support of the overall judgement over the economic impact of FDI in the two regions. The indicators used are the labour productivity and TFP of the regions relative to the national average. Again, these indicators help to exclude the effects of nation-wide factors and to single out regional characteristics including

the regional nexuses of FDI utilisation and economic growth. It can be seen from the Table that, between 1991 and 2001, Shanghai-Jiangsu industry as a whole exhibited an increase in relative labour productivity, while Guangdong industry exhibited a very substantial decrease: by 0.134 and -0.336, respectively, for the two regions. More important, as for the overall impact of FDI which is captured by the indicator of the change in relative TFP, Shanghai-Jiangsu appears to have done far better than Guangdong: it is 0.055 and -0.156, respectively, for the two regions. And these indicators should capture the overall economic impact of FDI – i.e., inter-sector spillover and promotion of institutional change, in addition to all the aggregate and intra-sector effects indicated in the previous section – because the level of analysis is now the regions, which basically have their own systems of linked industries and inter-related institutions.

[Table 6]

5. Discussion: Some Revelations from The Two Regional Models

What lessons does the comparative analysis of the two regions hold for the assessment of FDI utilisation in China as a whole? The finding that the economic impact of FDI in Guangdong is far less favourable than that nation-wide, and even more so in comparison to Shanghai-Jiangsu, appears to undermine the export-oriented, labour-intensive pattern of development. But, this does not necessarily imply that the alternative inward-looking, capital-deepening pattern, which seems characteristic of the Shanghai-Jiangsu case, represents a better approach to utilising FDI for economic development. Two important issues need to be adequately investigated before such judgement can be considered to be established.

The first issue concerns the sustainability of the Shanghai-Jiangsu nexus of FDI utilisation and economic development (the 'Shanghai model'). As noted earlier, a problem with this model is the persistence of hefty foreign trade deficits by FIEs in the region. Such persistence indicates that the deficits are likely a long-term or structural phenomenon, rather than just

transitional. They thus pose a limit to the sustainability of the model. Conceptually, in the theoretical literature, it is often alerted that the persistence of foreign trade deficits could result in a dangerous 'debt trap'. In other words, the deficits could reflect a structural dependence of the economy concerned on imports – in the sense that not only the rate of economic growth but rather the normal working of the economy in general could be seriously disrupted when the deficits become unsustainable. A fundamental, often painful, change of the entire pattern of development would then become unavoidable, just like the experience of the Chinese economy as a whole in the second half of the 1980s. In this light, the inward-looking 'Shanghai model' might have well been linked to the outward-looking 'Guangdong model', through the flows of export earnings from the latter region to the former region. The two 'models' might not be freely or readily available for policy choice. Whether or not this is the case, the general point is that the feasibility of applying the 'Shanghai model' to China as a whole must be seriously limited.

But the 'Guangdong model' might not be sustainable, too. It is noted that Guangdong, despite being the first-mover in FDI utilisation and foreign trade liberalisation, turned to become labour-intensive, export-oriented only in the 1990s – only 6 out of the 15 FIEs-dominated sectors were labour-intensive in 1991, and FIEs had been running foreign trade deficits up until 1995. And the turn to this new development pattern appears to be more likely being forced to do so, i.e., an outcome of losing competitiveness of Guangdong industry in the national market, than a matter of deliberate choice. This change occurred amid the slowdown of the province's economic growth, relative to the national average, and the deterioration of its terms of trade vis-à-vis the rest of the country (see below). Perhaps most important, in conjunction with the declining relative TFP noted earlier, the change to the new development pattern has not reversed the trend of the decline in Guangdong's industrial profitability relative to the national average. As can be seen from Figure 2, the pre-tax profit rate of Guangdong industry became lower than the national average in 1994, and it had remained so

until 2002. It is particularly at this point that the sustainability of the new, post-1991 'Guangdong model' is cast in doubt.

[Figure 2]

Meanwhile, the second issue that requires investigation concerns the relationship between the 'Shanghai model', as well as the 'Guangdong model', and the national economy. The finding that FDI does have made positive and significant contribution to local economic growth in Shanghai-Jiangsu does not necessarily imply that this is also conducive to the economic development of China as a whole. Figure 3 charts out the GDP and fixed-asset investment shares of Shanghai-Jiangsu, and those of Guangdong. It is noted that, for Shanghai-Jiangsu, its investment share was substantially larger than its GDP share for the period between 1986 and 1998, that is, for most of the years when its absorption of FDI took off. And it is not clear whether the reverse of the situation after 1999 represents a long-term trend, because this has occurred only after a very massive expansion in the investment share in the previous years of 1993-98. A similar phenomenon is also observable in the case of Guangdong. The province's investment share was substantially larger than its GDP share for the period between 1981 and 1996, that is, again, for most of the years when its absorption of FDI took off. And, just like Shanghai-Jiangsu, the reverse of the situation after 1997 has occurred only after a very massive expansion in the investment share in the previous years of 1991-96. Thus, the picture presented in Figure 3 appears contradicting the reputation of the two regions, as forerunners of China's systemic reform and integration into the world market, of being the most efficient parts of the national economy. By extension, the contribution of the much higher-than-average degree of presence of FIEs to the improvement in efficiency in the two regions also appears to be limited, and can hardly be considered as a main factor of local economic growth.

[Figure 3]

A more comprehensive judgement on the relative efficiency performance of the two regional economies needs to take into account their exchange relationships with the rest of the country as well. Figure 4 charts out the GDP shares of the two regions in the national economy, both in current prices and constant prices. The deviation between the current-price measure and the constant-price measure can be interpreted as showing the evolution of the terms of trade between the regions and the rest of the country.

[Figure 4]

At one level, the evolution shown in Figure 4 reflects the situation of transfers in productivity gains from the regions to the rest of the country, just like the secular decline of the terms of trade of Chinese industry as a whole vis-à-vis the rest of the economy during this period. On this count, the 'Shanghai model' has done much better than the 'Guangdong model'. Whilst the constant-price GDP share of Shanghai-Jiangsu has exceeded the current-price GDP share throughout the reform era, i.e., a secular decline in its terms of trade, this has happened to Guangdong only after 1992 – and the gap between the two measures has always been much larger in Shanghai-Jiangsu than in Guangdong. In assessing the contribution to national economic development, the higher investment share of Shanghai-Jiangsu should be balanced by taking into account this change in terms of trade and with it the productivity transfer from the region. The same cannot be said to be true for Guangdong, though, where the scale of its productivity transfer to the rest of the country has appeared to be much smaller.

At another level, the evolution of the terms of trade also reflects the changing competitiveness of the two regions in the national market. On this count, and against the background of its very rapid progress in industrialisation, Guangdong's deviation in the 1980s from the nation-wide trend of declining industrial terms of trade appears to be rather unusual. It is likely to have been connected to a well-studied phenomenon that was prominent in Guangdong's economic growth during this period: namely, the utilisation of its first-mover advantage to develop a wide range of new, import-dependent consumer durable industries (e.g., consumer

electronics and electrical appliances) which fitted well into the changes in the consumption pattern nation-wide. In other words, the improving terms of trade in the 1980s might reflect the position of temporary monopoly in the national market, which Guangdong was able to continuously create by utilising its first-mover advantage. The economic role of FDI in the province could also be seen in this light. Conversely, the change to the trend of deteriorating terms of trade in the 1990s might reflect the inability of Guangdong to maintain this position – because of the loss of first-mover advantage due to changes in central government policy, and because the popular products (e.g., cars, mobile phones, petrochemicals) now turned out to be in very competitive national markets and/or required high technology to produce.

The Shanghai-Jiangsu region, with a better technological capability, has appeared to be in a better position than Guangdong in reaping the new market opportunities in the 1990s. Yet, the fact that its terms of trade has not had marked improvement indicates that Shanghai-Jiangsu just cannot repeat the Guangdong experience of continuously creating a monopolistic position in the national markets. The fact that it has not followed Guangdong to turn to largely increase export-orientation might further indicate that Shanghai-Jiangsu industry, similar to worldwide experiences of industries created through the inward-looking cum capital-deepening pattern of development, is rather insufficient in export competitiveness.

Overall, the analysis and discussion above, albeit tentative, do appear to give support to the judgement that the 'Shanghai model' does work better than the 'Guangdong model' in promoting local and national economic development. The main qualification, though, is that this better model might not be sustainable on its own, and hence might need to seek support from the export earnings of the seemingly worse model. In other words, the applicability of the 'Shanghai model' to China as a whole could be rather limited.

6. Conclusions

The objective of this paper is to assess the role of FDI in China's economic development with reference to the broader literature on FDI and late development in general. The paper claims no credit in terms of providing new modelling framework, or formulating and testing new (econometrically) testable hypothesis. What it attempts to do is to relate the analyses of the impact of FDI to China's specific patterns of economic development. In this way, the paper seeks to fill a conspicuous and important lacuna in existing studies – that is, to find out the concrete mechanisms through which FDI impacts on the Chinese economy.

Substantively, we have come out with three main findings from the analyses in this paper. First, it is found that FDI tends to promote the improvement in allocative efficiency, while having a negative impact on productive efficiency. Second, insofar as FDI does promote overall productivity growth, this tends to be a matter of cumulative causation rather than one of single-direction causation. Third, in the context of a comparative analysis of two distinctive regional models, it is found that the economic impact of FDI tends to be more favourable in the inward-looking, capital-deepening pattern of development (the 'Shanghai model') than that in the export-oriented, labour-intensive pattern (the 'Guangdong model').

We then carry out further analyses on the two regional development patterns, with the results being broadly supportive of the third finding indicated above. Our discussion associated with the further analyses, however, has come to the judgement that the inward-looking, capital-deepening pattern of development has its intrinsic problems of sustainability. The scope for applying the 'Shanghai model' to China as a whole is thus judged to be limited.

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Figure 1. The scale of FDI flows to China, 1979-2002
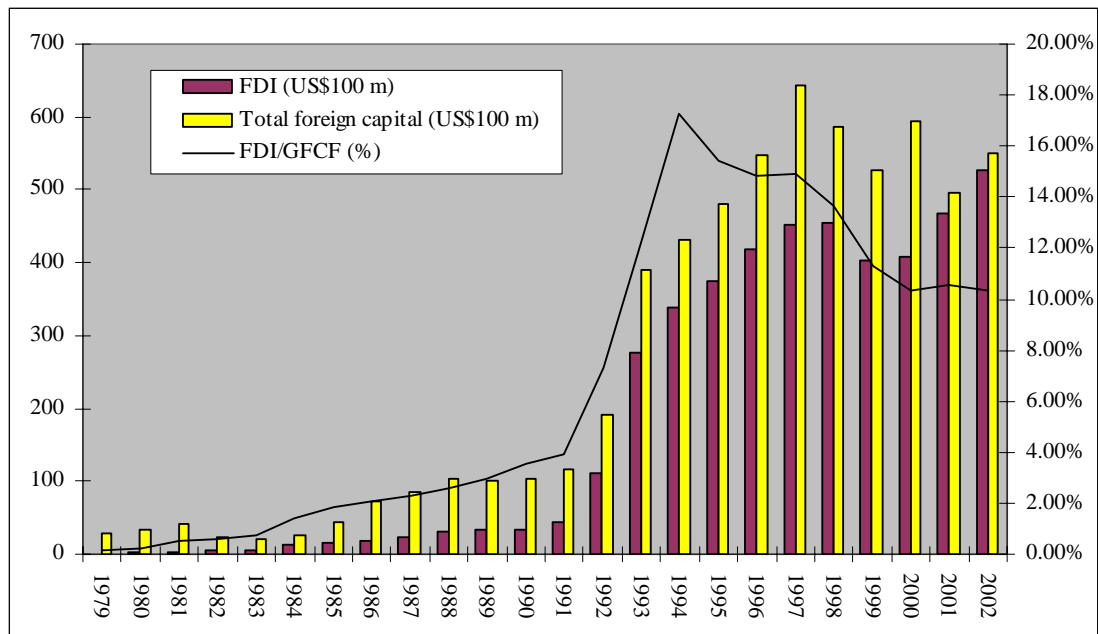
Sources: 1979-82 figures from Chen *et al.* (1995); all others from *Zhongguo Tongji Nianjian* [China Statistical Yearbook], various issues.

Notes: GFCF = gross fixed capital formation. In calculating the FDI/GFCF ratios, FDI figures are converted into Chinese currency at the year-average official exchange rates.

Table 1. Export and import value of foreign capital-invested enterprises (FIEs), 1985-2002

	Exports		Imports		Balance	Balance of China's
	Amount (US$ 100m)	as % of total	Amount (US$ 100m)	as % of total	(US$ 100m)	Total foreign trade (US$ 100m)
1985	3	1.10%	21	4.97%	-18	-149
1986	5	1.62%	26	6.06%	-21	-120
1987	12	3.04%	34	7.87%	-22	-38
1988	25	5.26%	59	10.67%	-34	-78
1989	49	9.35%	88	14.88%	-39	-66
1990	78	12.59%	123	23.09%	-45	87
1991	123	17.12%	169	26.56%	-46	81
1992	174	20.44%	211	26.23%	-38	44
1993	252	27.51%	418	40.24%	-166	-122
1994	347	28.68%	529	45.78%	-182	54
1995	469	31.51%	629	47.66%	-161	167
1996	615	40.72%	756	54.46%	-141	122
1997	749	40.98%	777	54.59%	-28	404
1998	810	44.07%	767	54.70%	42	435
1999	886	45.47%	859	51.83%	27	292
2000	1194	47.93%	1173	52.10%	22	241
2001	1332	50.06%	1259	51.67%	74	225
2002	1693	52.00%	1624	55.00%	69	304

Sources: *Zhongguo Tongji Nianjian* [China Statistical Yearbook], various issues; Wang Luolin (ed.) (1997) *Report on Foreign Direct Investment in China*, Beijing, Economic Science Press; *Renmin Ribao* [People's Daily], 27 January 2003.

Table 2. Relative performance of FIEs-dominated sectors: national, 1980, 1991 and 2001

	Industrial value-added in 2001 (100 m yuan)			Relative labour productivity of sector					Relative total factor productivity of sector				
	(a) Sector	(b) FIEs	(b)/(a)	1980	1991	2001	80-91 change	91-01 change	1980	1991	2001	80-91 change	91-01 change
Electronic and telecom equipment	2035	1403	68.95%	0.753	1.415	1.907	0.662	0.492	0.821	1.420	1.954	0.599	0.535
Cultural, educational and sports goods	180	111	61.83%	0.989	0.804	0.516	-0.185	-0.288	1.557	1.186	0.925	-0.371	-0.261
Leather, furs, down and related products	392	210	53.58%	0.701	0.678	0.592	-0.023	-0.086	1.147	0.969	1.091	-0.178	0.123
Instruments, meters, cultural and office machinery	238	120	50.36%	0.850	0.831	0.567	-0.019	-0.264	0.963	1.066	0.886	0.104	-0.181
Garments and other fiber products	688	319	46.42%	0.600	0.679	0.558	0.079	-0.121	1.335	1.089	1.025	-0.246	-0.065
Furniture Manufacturing	118	54	45.91%	0.419	0.522	0.757	0.102	0.235	0.746	0.788	1.078	0.042	0.290
Plastic products	545	248	45.52%	0.745	0.873	0.894	0.128	0.020	1.094	0.974	1.022	-0.121	0.048
Rubber products	248	92	37.03%	1.863	1.245	0.774	-0.618	-0.471	2.274	1.535	0.890	-0.739	-0.645
Metal products	713	251	35.22%	0.626	0.743	0.830	0.117	0.086	0.919	1.034	1.063	0.115	0.029
Electric equipment and machinery	1378	457	33.17%	0.946	1.138	1.174	0.192	0.036	1.188	1.343	1.40	0.155	0.059
Printing and record media reproduction	244	80	32.94%	0.647	0.749	0.857	0.102	0.108	0.882	0.954	0.952	0.072	-0.002
Transport equipment	1634	536	32.82%	0.689	1.025	1.059	0.336	0.035	0.667	1.136	1.137	0.470	0.001
Papermaking and paper products	475	148	31.06%	0.905	0.790	0.801	-0.115	0.012	1.012	0.889	0.796	-0.123	-0.093
Beverage manufacturing	643	181	28.17%	1.440	1.536	1.299	0.096	-0.237	1.723	1.418	1.247	-0.305	-0.171
Food manufacturing and processing	1397	405	29.02%	0.816	0.933	1.044	0.117	0.111	0.965	0.966	1.189	0.001	0.223
All 40 sectors	28329	7128	25.16%	1.000	1.000	1.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000

Sources: *Zhongguo Tongji Nianjian* [China Statistical Yearbook], various issues; *Zhongguo Gongye Jingji Tongji Nianjian* [China Industrial Economics Statistical Yearbook], various issues.

Notes: Labour productivity is calculated as net value of industrial output divided by year-end number of workers for 1991, and industrial value-added divided by year-average number of workers for 2001. TFP is calculated as $TFP = Q/[(L^{0.6})(K^{0.4})]$, where Q is net value of industrial output or industrial value-added, L is number of workers, and K is value of fixed asset net of depreciation. The same calculation is used in Tables 4, 5 and 6.

Table 3. Production and trade characteristics of FIEs, 1989-2002

	Balance in foreign trade (US$ 100m)			Value added per worker (Rmb)				
	National	Shanghai-Jiangsu	Guangdong	(a) National	(b) Shanghai-Jiangsu	(c) Guangdong	(b)/(a)	(c)/(a)
1989	-39		-13					
1990	-45		-16					
1991	-46		-18					
1992	-38	-21	-32					
1993	-166	-38	-54	33123	43647	31523	1.318	0.952
1994	-182	-37	-55	33949	45307	32808	1.335	0.966
1995	-161	-51	-17					
1996	-141	-60	4					
1997	-28	-34	41	49581	63554	51679	1.282	1.042
1998	42	-24	75					
1999	27	-19	55	61260	82729	51930	1.350	0.848
2000	22	-62	70	71403	94391	59588	1.322	0.835
2001	74	-58	101	75913	104631	64161	1.378	0.845
2002	69	-81	106	81313	109999	65883	1.353	0.810

Sources: *Zhongguo Tongji Nianjian* [China Statistical Yearbook], various issues; *Zhongguo Gongye Jingji Tongji Nianjian* [China Industrial Economics Statistical Yearbook], various issues; Wang Luolin (ed.) (1997) *Report on Foreign Direct Investment in China*, Beijing, Economic Science Press; *Renmin Ribao* [People's Daily], 27 January 2003.

Table 4. Relative performance of FIEs-dominated sectors: Guangdong, 1991 and 2001

	Industrial value-added in 2001 (100 m yuan)			Relative labour productivity of sector			Relative total factor productivity of sector		
	(a) Sector	(b) FIEs	(b)/(a)	1991	2001	1991-2001 change	1991	2001	1991-2001 change
Instruments, meters, cultural and office machinery	63.20	55.46	87.75%	0.939	0.862	-0.078	1.112	1.179	0.067
Cultural, educational and sports goods	68.82	53.62	77.91%	0.519	0.341	-0.178	0.785	0.633	-0.152
Leather, furs, down and related products	98.97	75.38	76.16%	0.554	0.357	-0.198	0.800	0.691	-0.109
Rubber products	20.42	14.98	73.36%	0.747	0.607	-0.140	0.953	0.702	-0.251
Electronic and telecom equipment	655.17	469.06	71.59%	1.097	1.317	0.220	1.106	1.475	0.369
Textile industry	143.43	102.65	71.57%	0.726	0.713	-0.013	0.695	0.795	0.100
Transport equipment	133.23	94.25	70.74%	1.281	1.307	0.025	1.371	1.302	-0.069
Plastic products	140.08	95.97	68.51%	0.946	0.716	-0.230	0.887	0.830	-0.057
Furniture Manufacturing	30.70	20.03	65.24%	0.681	0.592	-0.089	0.859	0.929	0.070
Raw chemical materials and chemical products	183.07	117.86	64.38%	1.419	1.883	0.464	1.322	1.553	0.231
Beverage manufacturing	60.99	39.10	64.11%	1.998	2.014	0.016	1.439	1.464	0.025
Garments and other fiber products	155.63	99.16	63.72%	0.550	0.406	-0.144	0.875	0.757	-0.118
Printing and record medium reproduction	46.43	29.10	62.67%	0.908	0.830	-0.078	1.017	0.839	-0.178
Papermaking and paper products	69.99	43.26	61.81%	1.001	0.916	-0.085	1.013	0.811	-0.202
Metal products	167.77	98.72	58.84%	0.948	0.800	-0.149	1.110	0.967	-0.142
All 40 sectors	3738.28	2153.18	57.60%	1.000	1.000	0.000	1.000	1.000	0.000

Sources: *Zhongguo Tongji Nianjian* [China Statistical Yearbook], various issues; *Zhongguo Gongye Jingji Tongji Nianjian* [China Industrial Economics Statistical Yearbook], various issues; *Guangdong Tongji Nianjian* [Guangdong Statistical Yearbook], various issues.

Notes: Data for 1980 are not available. There are another two sectors which are among the top 15 sectors ranked by the value-added shares of FIEs – namely, petroleum extraction, and other manufacturing. But, because the former sector did not have FIEs in 1991, while there was no separate data for the latter sectors, they are replaced here by the 16th and 17th sectors, i.e., paper products and metal products.

Table 5. Relative performance of FIEs-dominated sectors: Shanghai-Jiangsu, 1991 and 2001

	Industrial value-added in 2001 (100 m yuan)			Relative labour productivity of sector			Relative total factor productivity of sector		
	(a) Sector	(b) FIEs	(b)/(a)	1991	2001	1991-2001 change	1991	2001	1991-2001 change
Electronic and telecom equipment	253.04	193.84	76.60%	1.253	1.831	0.578	1.283	1.690	0.407
Instruments, meters, cultural and office machinery	37.72	22.57	59.84%	0.896	1.032	0.136	1.193	1.345	0.152
Papermaking and paper products	50.16	29.10	58.01%	0.820	0.993	0.173	0.971	0.699	-0.272
Rubber products	27.80	16.00	57.55%	1.178	0.658	-0.520	1.430	0.666	-0.763
Cultural, educational and sports goods	27.81	13.77	49.51%	0.854	0.505	-0.349	1.298	0.887	-0.410
Leather, furs, down and related products	32.93	14.01	42.54%	0.702	0.516	-0.186	0.991	0.966	-0.025
Furniture Manufacturing	9.49	3.86	40.67%	0.483	0.799	0.316	0.720	1.072	0.352
Garments and other fiber products	131.73	49.22	37.36%	0.673	0.537	-0.136	1.034	1.009	-0.025
Timber processing, bamboo, cane, palm fiber and straw products	24.77	8.97	36.21%	0.580	0.700	0.120	0.715	0.881	0.166
Nonmetal mineral products	115.04	39.74	34.54%	0.502	0.661	0.159	0.656	0.727	0.071
Plastic products	68.81	22.22	32.29%	0.789	0.928	0.139	0.907	0.980	0.073
Food processing and manufacturing	113.49	35.48	31.26%	0.772	0.976	0.204	0.826	1.115	0.288
Printing and record medium reproduction	17.49	5.23	29.90%	0.801	0.875	0.074	0.990	0.962	-0.029
Metal products	104.76	30.43	29.05%	0.727	0.810	0.083	0.950	1.004	0.054
Transport equipment	128.72	26.54	20.62%	1.272	1.366	0.094	1.300	1.286	-0.015
All 40 sectors	2943.45	835.68	28.39%	1.000	1.000	0.000	1.000	1.000	0.000

Sources: *Zhongguo Tongji Nianjian* [China Statistical Yearbook], various issues; *Zhongguo Gongye Jingji Tongji Nianjian* [China Industrial Economics Statistical Yearbook], various issues; *Jiangsu Tongji Nianjian* [Jiangsu Statistical Yearbook], various issues; *Shanghai Tongji Nianjian* [Shanghai Statistical Yearbook], various issues.

Notes: Data for 1980 are not available. The first three columns are Jiangsu data only, because the Shanghai statistical authorities have not published data of the distribution of FIEs by industrial sectors. Transport equipment is not among the top 15 sectors ranked by the value-added share of FIEs, but because it is well-known that the sector in Shanghai is with prominent FIEs presence and with a scale of national importance, it is included in the analysis here.

Table 6. Relative performance of industries in Guangdong and Shanghai-Jiangsu, 1991 and 2001

|	1991	2001	change
Relative labour productivity			
Guangdong	1.576	1.240	-0.336
Shanghai-Jiangsu	1.179	1.313	0.134
Relative TFP			
Guangdong	1.417	1.261	-0.156
Shanghai-Jiangsu	1.220	1.275	0.055
Sources: *Zhongguo Tongji Nianjian* [China Statistical Yearbook], various issues; *Zhongguo Gongye Jingji Tongji Nianjian* [China Industrial Economics Statistical Yearbook], various issues.			

Figure 2. Pre-tax profit rates of industry: differences from the national average, 1985-2002
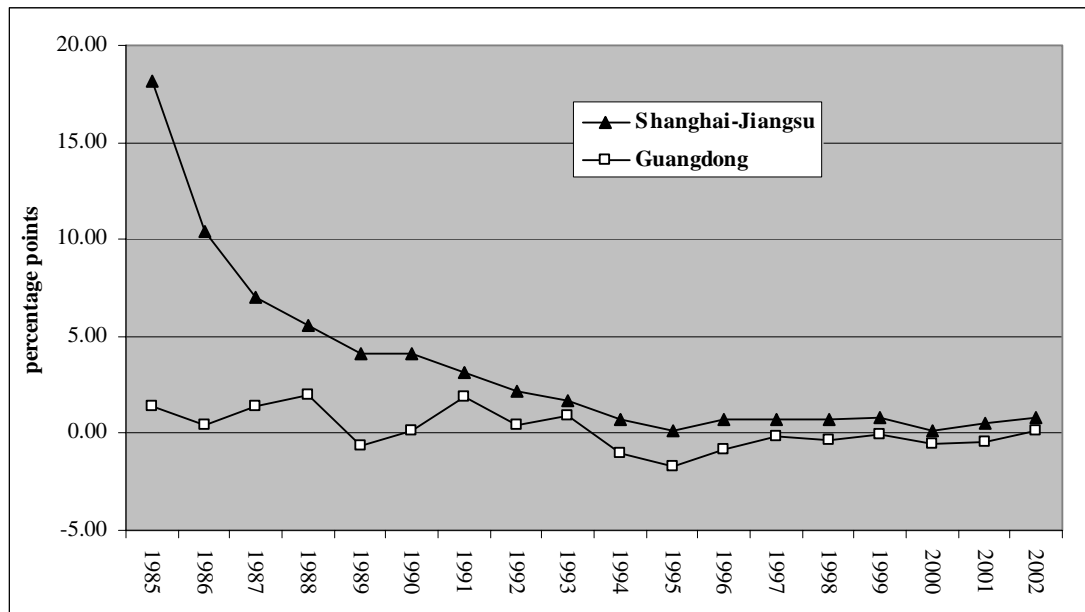
Sources: *Zhongguo Tongji Nianjian* [China Statistical Yearbook], various issues; *Zhongguo Guding Zichan Touzi Tongji Nianjian* [China Fixed-asset Investment Statistical Yearbook], various issues.

Notes: Data shown in the figure are industry pre-tax profit rates of Shanghai-Jiangsu, and of Guangdong, minus those of national average.

Figure 3. GDP and fixed-asset investment shares, 1981-2002
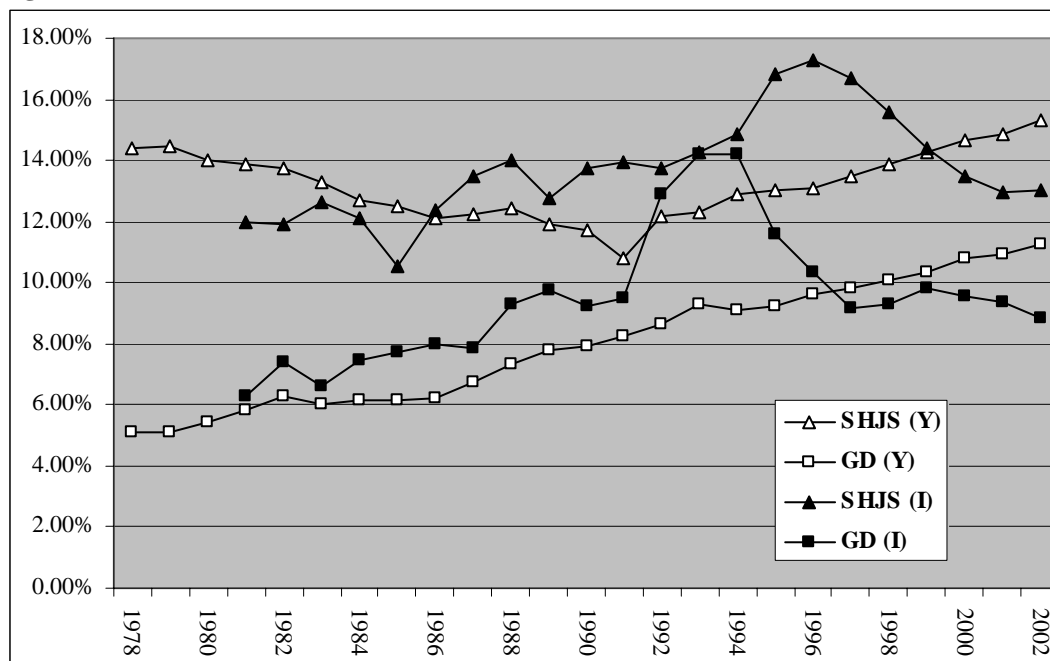
Sources: *Zhongguo Tongji Nianjian* [China Statistical Yearbook], various issues; *Zhongguo Guding Zichan Touzi Tongji Nianjian* [China Fixed-asset Investment Statistical Yearbook], various issues; the 2003 Statistical Communiqué of the central government, and of the Guangdong, Jiangsu and Shanghai governments.

Notes: SHJS = Shanghai and Jiangsu. GD = Guangdong. Y = GDP at current prices. I = fixed-asset investment.

Figure 4. GDP shares in current prices and constant prices, 1978-2002
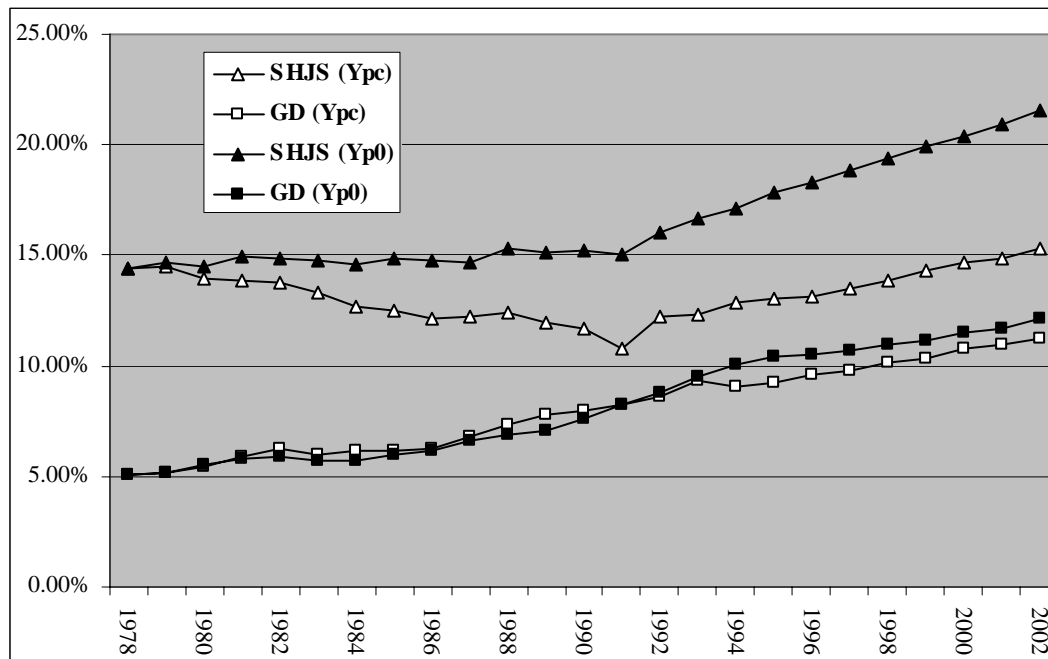
Sources: *Zhongguo Tongji Nianjian* [China Statistical Yearbook], various issues; *Guangdong Tongji Nianjian* [Guangdong Statistical Yearbook], various issues; *Jiangsu Tongji Nianjian* [Jiangsu Statistical Yearbook], various issues; *Shanghai Tongji Nianjian* [Shanghai Statistical Yearbook], various issues; the 2003 Statistical Communiqué of the central government, and of the Guangdong, Jiangsu and Shanghai governments.

Notes: SHJS = Shanghai and Jiangsu. GD = Guangdong. Y(pc) = GDP at current prices. Y(p0) = GDP at 1978 constant prices.

Appendix: Main economic indicators of Guangdong, Jiangsu and Shanghai, 2002

	National	Shanghai		Jiangsu		Guangdong	
Population (year-end, 10,000 persons)	128453	1625	1.27%	7381	5.75%	7859	6.12%
Labour employment (year-end, 10,000 persons)	73740	743	1.01%	3506	4.75%	3967	5.38%
GDP (current prices, 100 m yuan)	104791	5409	5.16%	10632	10.15%	11770	11.23%
Secondary sector (current prices, 100 m yuan)	53541	2564.7	4.79%	5551	10.37%	5936	11.09%
Formal firms industrial value-added (current prices, 100 m yuan)	32995	2132	6.46%	3547	10.75%	4361	13.22%
FIEs industrial value-added (current prices, 100 m yuan)	8573	1137	13.26%	1067	12.44%	2545	29.68%
Fixed-asset investment (100 m yuan)	43500	2214	5.09%	3450	7.93%	3851	8.85%
Export value (US$100 m)	3256	310	9.52%	390	11.98%	1191	36.58%
Import value (US$100 m)	2952	412	13.96%	355	12.03%	1064	36.04%
Contracted FDI (US$100 m)	828	106	12.80%	197	23.79%	162	19.57%
Utilised FDI (US$100 m)	527	43	8.16%	102	19.35%	113	21.44%
Sources: *Zhongguo Tongji Nianjian* [China Statistical Yearbook], 2003; and the 2003 Statistical Communiqué of the central government, and of the Guangdong, Jiangsu and Shanghai governments.							
Notes: Percentage figures are shares of the national total.							