Bargaining Power and Foreign Direct Investment in China: Can 1.3 Billion Consumers Tame the Multinationals?

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Bargaining Power and Foreign Direct Investment in China: Can 1.3 Billion Consumers Tame the Multinationals?

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Abstract

Foreign direct investment (FDI) has become a much desired commodity by nations, regions and cities throughout the world. Indeed, governments bid for FDI because it is commonly thought to be an important engine of economic growth, job creation, and technological upgrading. The People's Republic of China (PRC), the developing world's largest recipient of FDI and one of the world's fastest growing economies, is often cited as evidence for the beneficial effects of FDI. Given the PRC's size and the huge allure of its cheap labor force and customer base, one would think that if any country had the bargaining power vis a vis multinational corporations to benefit from FDI, it would be China. But does FDI really deliver these commonly perceived benefits? To answer this question, we study the impact of inward FDI on wages, job creation, investment and tax generation in the PRC from 1986-1999 by running panel regression analysis on provincial level data. An innovation of our analysis is to distinguish the impact of FDI inflows from that of economic liberalization, per se. We find that, contrary to the conventional wisdom, inward FDI has a relatively small positive impact on wages and employment, while having a negative impact on domestic investment and tax revenue. We suggest that the decentralization of the FDI bidding process in China contributes to these negative outcomes, and argue that the limitation on FDI management tools associated with China's WTO entry is likely to further reduce the benefits of FDI for Chinese workers and citizens .

I. Introduction

Foreign direct investment (FDI) is commonly seen by economists and policy makers as a premier agent, not only of globalization, but also of economic growth and development. In fact, in light of the Asian and South American financial crises, in which portfolio flows proved to be flighty and unreliable, FDI is now treated more than ever as the capital flow of choice. FDI has thus become one of the most sought-after commodities in the global economy, the object of enormous investments of time and resources by policy makers who want to attract it, and the subject of an enormous amount of research and debate concerning its nature and impact.

It is not surprising, then, that the role of foreign direct investment in the People's Republic of China (PRC)[1] provides fertile ground for studying the dynamics of FDI and globalization. The PRC has attracted a large amount of FDI over the last decade, the most of any developing country, and in recent years, it was among the top four recipients of FDI in the world. FDI flows to the PRC have occurred in a context of intense global competition for foreign investment by many countries, including developing countries in Asia. And the entry of China into the World Trade Organization (WTO) may dramatically affect the types and quantity of FDI flowing to China, and the government's ability to manage and direct it. Indeed, many competitors in Southeast Asia and elsewhere worry that the PRC's entry will lead to an acceleration of investment flows to the PRC and a corresponding reduction in flows to themselves. Hence, China provides more than just a case study of foreign investment; understanding the dynamics of FDI in China is essential to understanding the dynamics of FDI in the world economy as a whole.

Globalization and FDI

There are two, broad competing visions of globalization in general and the role of FDI in particular (Crotty, Epstein and Kelly 1998). One is the "neo-liberal vision," which treats FDI as an agent for spreading capital, technology and management skills across the globe and, therefore, as a crucial agent for economic growth and development. According to this view, any government that wants to partake of these benefits of FDI must implement a set of policies and institutional innovations, including openness to investment, modest regulation, government transparency, modest tax rates, and investor guarantees.

The second vision is not as sanguine about the impact of globalization and FDI. Rather than envisioning a "race to the top" or a "convergence," as forecast by neo-liberal adherents, this group fears a "race to the bottom." According to this view, global competition for FDI places an enormous amount of bargaining power in the hands of multinational corporations (MNCs) and their allies in the International Monetary Fund (IMF), U.S. Treasury and World Bank. This competition, in turn, forces countries to lower regulations, taxes, environmental protections, wages and working conditions in order to attract and retain capital. The result is a leveling down of wages, social protections and government control across the globe (Barnet and Cavanaugh 1994; Greider 1997). These two views – neo-liberal versus race to the bottom – have become increasingly polarized, fought out in academic circles, policy fora and in the streets during annual meetings of the IMF, WTO and other global institutions.

As for policy, race to the bottom adherents argue for constraints on FDI in order to protect the living standards of workers in the developed economies, and to restrict the alleged exploitation

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[1] Hong Kong's return to Chinese rule in 1997 has not altered its status as a distinct administrative and economic entity, so it is treated separately from the PRC in this paper.

of workers and communities in the developing world. By contrast, proponents of the neo-liberal view, and many academics and policy makers from developing countries, insist that proposed constraints on foreign investment are self-serving: they only raise the living standards of workers in the developed world at the expense of workers in developing countries.

Crucial to this policy debate is an empirical question: Does FDI in fact raise the living standards of communities in the developing world? If FDI does make a substantial contribution to growth and development, as the neo-liberal advocates assume, then there may be a trade-off between protecting workers in the North and those in the South. However, if the race to the bottom view is correct and FDI in the current context does not help the majority of citizens in either developing or developed countries, then regulating FDI – for example by imposing codes of conduct or living wage legislation – might be in the common interests of workers in both North and South.

As we have argued elsewhere, the impact of FDI will depend greatly on the institutional context in which it takes place (Braunstein and Epstein 1999; Crotty, Epstein and Kelly 1998). As in the race to the bottom view, we see bargaining power between MNCs and governments, communities and workers as an essential determinant of the ability of countries and communities to benefit from FDI. In principle, under the right institutional circumstances, countries or regions could exert bargaining power over MNCs, and regulate them in such a way as to generate significant benefits for their communities. The questions are: what are the right circumstances? Do the countries try do it? and, With what effect?

FDI in China

If any developing country would seem to have bargaining power relative to MNCs, it would be the PRC. China's 1.3 billion consumers provide an enormous lure for companies wanting to get a foothold in the Chinese market. And the PRC's almost limitless supply of cheap labor makes it an enormously attractive location for labor-intensive, export-oriented production. Moreover, the Chinese government has a strong regulatory apparatus in place to manage and control MNCs. Under these circumstances, one would expect that MNCs would be willing to make significant concessions to Chinese communities, workers and governments. One possible measure of the PRC's bargaining strength is the oft lamented "fact" that many foreign companies fail to make profits in China, nonetheless remaining there in order to be well positioned in the long-run to sell to the Chinese consumer.

An important question is whether the PRC government has been able to exploit its presumptive bargaining power to capture a greater share of the benefits from FDI than have countries with less bargaining power. If so, this would strengthen the argument that the free movement of FDI is in the interest of Chinese workers, even if it might not be in the interest of some workers in the U.S. However, if China has not been able to use its potential bargaining power to benefit substantially from FDI, that would call into question the desirability of making significant concessions to attract FDI in China. And this caution would apply even more strongly to other countries with much less bargaining power than China, which is to say, virtually every other country in the developing world.

There are many important issues associated with this question. Has the Chinese government tried to capture a significant share of the benefits and, if so, how has it tried to do so? For example, has the Chinese government attempted to achieve a high degree of technology

transfer from MNCs? A substantial focus on export markets? High tax revenue? An improvement in wages and working conditions for workers? If so, has it been successful in this regard? Has it been more successful than other developing countries?

A number of factors have potentially undermined the Chinese government's ability to exploit its presumptive bargaining power relative to MNCs. Among the most important of these has been the extraordinary de-centralization of China's investment management institutions. As part of the reforms begun in 1979, China's central government ceded significant powers to provincial and local governments to attract and manage foreign investment. At the same time, the central government created significant political and economic incentives for provincial and local officials to try to attract investment, including signaling government officials that if they attracted more investment they would have better career prospects.

Other potential factors reducing the benefits of FDI to the PRC's general population include corruption, which allegedly pervades government-business relations, and the relative absence of independent labor organizations. Taken together, these three factors imply that benefits which could have accrued to the Chinese populace might have been siphoned off by government officials and shared with the MNCs themselves.

However much the PRC has been able to exploit its bargaining power in the recent past, its entry into the WTO could dramatically reduce its bargaining power and the distribution of benefits from FDI. Among other effects, WTO regulations may limit China's ability to engage in industrial policy, potentially compromising the PRC's capacity to manage FDI in the interests of its economy.

In this paper we will elaborate on these points by investigating issues of the race to the bottom versus neo-liberal convergence in the case of FDI and China. In particular, we will consider the nature of China's bargaining power in relation to MNCs and FDI, how it has tried to manifest and exploit that power, what leakages have occurred as the government has tried to exploit that bargaining power, and with what impacts on the Chinese population. We will also study how China's likely entry into the WTO will alter China's bargaining power with MNCs. Finally, we will discuss the policy implications of our findings. In particular, we will ask whether there is an inevitable conflict of interest between workers in China on the one hand and those in the developed world on the other; or whether, as the race to the bottom approach implies, workers in both the PRC and the North have a common interest in regulating MNCs and FDI.

The paper will proceed as follows. The next section will review the recent history of Chinese policy towards FDI. We emphasize that the central government closely managed the process of foreign investment so that it would focus on exports rather than the domestic Chinese market. At the same time, the decentralized nature of some aspects of the policy made it difficult to manage all components of the FDI process. In this section, we also present some stylized facts about the size and distribution of FDI in China in recent years. In section III we present new empirical results assessing the impact of FDI on employment growth and wage growth. We show that its impact has been positive but rather limited in size. We then consider whether FDI has crowded in or crowded out investment, and we find that, in fact, it has crowded it out. In section IV we consider the decentralized nature of FDI bidding and consider the impact of FDI on local tax revenue. We find that it is negative, suggesting that, at least at the provincial level, the social benefits of FDI have been dissipated. In the penultimate section we look at the impact of China's

entry into the WTO on China's ability to manage and benefit from FDI. In the final section we consider some larger implications of our findings.

II. Stylized Facts of FDI in China

A. A Brief Review of Chinese Policy towards FDI

Introduction

The history of China's policy toward FDI is one of careful experimentation and management in an attempt to use FDI to simultaneously develop an export-led and import substitution strategy. The decentralized nature of Chinese administration has meant that some of these centrifugal tendencies have undermined certain aspects of the regulatory process. Over time, however, as the low-wage export-led strategy has run its limit, and as the Chinese government has broadened its liberalization strategy, China has attempted to attract a broader array of FDI, including joint ventures to serve the Chinese market. At the same time, the sources of investment have evolved from the Chinese Diaspora to a broader set of countries, including those in the U.S., Europe and Japan.

History

At the second session of the Fifth National People's Congress in July 1979, a joint ventures law was passed, granting foreign investment a legal status in China (Chen 1996: 33). In this initial period FDI was restricted to joint ventures in China's four special economic zones (SEZs) at the time (three in Guangdong province across the sea from Hong Kong (Shenzhen, Zhuhai (contiguous with Macao), and Shantou, and the fourth, Xiamen in Fujian Province, on the other side of the Straits of Taiwan) (World Bank 1994: 221). SEZs offered significant freedoms and advantages for foreign investors, including concessionary tax policies, exemption from export duties and import duties for equipment, instruments, and apparatus for producing export products, and an easing of entry and exit formalities (Chen 1997b: 8). Pressure from other localities led the State Council in 1984 to extend economic freedoms similar to those of the SEZs to 14 additional "open" coastal cities, and in 1985 to the Yangtze and Pearl River Deltas as well as to a larger proportion of Fujian (World Bank 1992).

Specific encouragement of FDI really began in 1986, with passage of the Wholly Foreign-Owned Enterprise Law, which, in addition to permitting wholly foreign-owned enterprises, also reduced fees for labor and land use, established a limited foreign currency exchange market for joint ventures, and extended the maximum duration of a joint-venture agreement beyond 50 years (Chen 1996; Huang 1998). These policy initiatives coincided with a broadening of the reach of China's Open Door Policy to include the entire coastal zone in 1988, a shift that became known as China's coastal development strategy. Open policies for FDI now extended to the entire coastal region, stressing two main goals: (1) to develop labor-intensive industry in the coastal area; (2) to base the production of these industries in labor intensive export processing of imported raw materials (Chen 1997d: 12).

The next watershed came in 1992, when Deng Xiaoping gave his now famous "Spring Wind" speech endorsing continued market reforms and rapid growth in the context of a post-Tiananmen conservative backlash (Shirk 1994: 39), and the size of FDI flows into China soon accelerated, especially from industrialized countries. It was also at this time that the Chinese

domestic market became more open to foreign firms (Cheng and Kwan 2000: 213), certainly a strong incentive for developed source countries trying to get around China's strict import controls. There was somewhat of a rollback on FDI liberalization in 1994, primarily to cool an overheating economy and discourage FDI in real estate (Cheng and Kwan 2000: 226), but when the economy cooled down liberalization continued. In recent years, FDI policy has also focused on encouraging technologically-intensive investment, as authorities have begun treating FDI as a means for acquiring foreign technology versus importing complete sets of advanced equipment (UNCTAD 2000: 26).

Since the mid-1990s, China's policy towards FDI can be at least partly evaluated in terms of its desire to join the World Trade Organization. This desire can help to explain the Chinese Government's attempt to rollback some of the special privileges for foreign investors. The idea is that as authorities reduce tariffs, they will also reduce preferential treatment for foreign-invested enterprises (FIEs), but preferential income tax treatment is expected to continue (Chen 1996: 43). In that spirit the Chinese government announced the removal of duty-free status on capital goods imports by FIEs to begin in April 1996, a measure that was heavily qualified by grandfather clauses. Partly as a result, FDI fell off in 1996-97, and successful lobbying by FIEs as well as provincial officials eager for FDI is having some effect: it has since been announced that previous exemptions, such as exemption from import duties and value-added taxes on imports of equipment, have been restored (Henley, Kirkpatrick and Wilde 1999: 240-41; UNCTAD 1999: 57).

In sum, China's policy towards FDI was clearly designed to encourage export-oriented FDI, looking externally to draw on both inputs and markets, and granting well-defined freedoms and incentives to the FIE sector. Policymakers, by developing the coastal development strategy that afforded SEZ-like privileges to the entire coast of China, created a kind of gigantic export processing zone, where free markets were defined not so much by geography but more by ownership (Naughton 1996: 302). It is also important to note that these liberalizing policies were in line with the government's own import substitution strategies, where FIEs and the limited free market in which they operated were largely separate from the centrally planned and inward-oriented sector (Kueh 1992). It is only recently as the size of the foreign-invested sector has continued to grow and sell to the domestic market that it has begun to exert important influences throughout the wider economy. These will be discussed more thoroughly below.

B.   The Numbers

Figure 1 traces the trajectory of nominal FDI inflows into China since 1986. The importance of policy shifts signaled by Deng's Spring Wind speech in 1992 are clearly visible. Since that time, China has been the largest recipient of FDI in the developing world, with the exception of 2000, when Hong Kong outstripped China by about US$ 20 billion. This surge for Hong Kong is partly attributable to China, though, as many investors claimed they were "parking" investments in Hong Kong, making ready to enter China once the course of its accession to the WTO got clarified (UNCTAD 2000: 25).

Figure 1
FDI flows into China, 1986-99
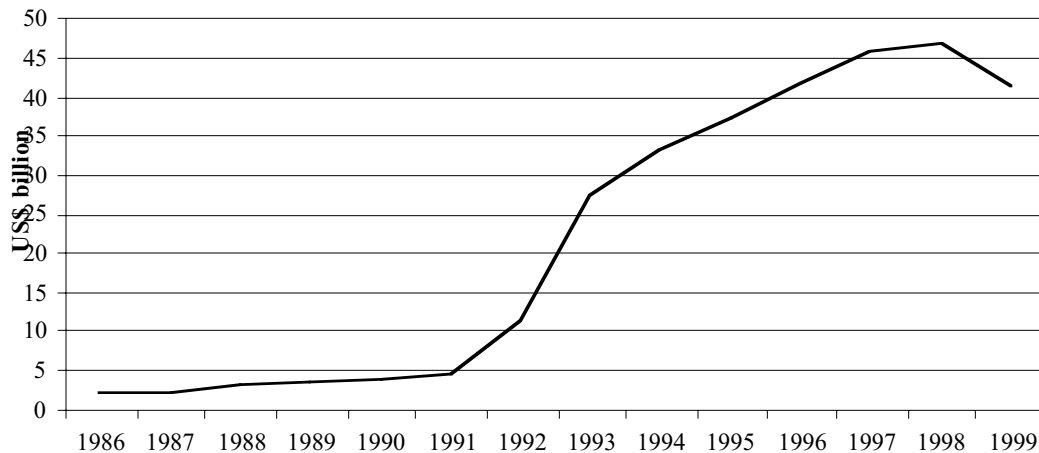
Source: China Statistical Yearbook, various years.

In terms of source countries, Table 1 lays out accumulated FDI stock by source region between 1983 and 1999. Hong Kong has long been the main source of FDI in China, partly because of its role as an entrepot. It has also been the key thoroughfare for round-tripping, where domestic investment gets funneled through Hong Kong and back into China to take advantage of the privileges afforded to FDI. Estimates of round-tripped investment range between 15 and 25 percent of Hong Kong investment, a substantial amount (Harrold and Lall 1993: 24; Huang 1998: 63; Wei 2000: 245).

In recent years Hong Kong investment has lost some of its dominance due to increasing investments by industrialized countries, especially from Western Europe. There has also been a significant upswing in FDI from Latin America; this increase comes from developed country tax havens in the Virgin and Cayman Islands, which together account for over 90 percent of FDI coming from Latin America. Overall, FDI from developing countries constitutes about 75 percent of FDI stock in China, assuming that Hong Kong can be classified as a developing country. This type of FDI tends to be concentrated in small, labor-intensive export-oriented manufacturing firms in China. Since the early 1990s, when flows from industrialized countries began to increase, so did the share of larger, more capital intensive joint ventures, which are also more likely to target China's domestic market (World Bank 1997; Kaiser, Kirby and Fan 1996; Zhu and Lu 1998; Henley, Kirkpatrick and Wilde 1999).

Indeed, there is some evidence of a spectrum of investment intentions, categorized by nationality of investor: investors from the Chinese Diaspora of Hong Kong and Taiwan, etc. are at one end, investing primarily in labor intensive, low wage exporting firms; firms from Japan investing in intermediate goods products and higher quality products for the Japanese market; and U.S. and European firms primarily investing in firms they hope will sell to the Chinese market. Of course, U.S. firms are well known to hire low wage FIE firms on a contract basis to produce goods for export.

Table 1
Accumulated FDI stock in China by source countries, 1983-1999
(1980 US$ million)

Source Countries	1983-91		1992-95		1996-99		1983-99	
	US$ million	%	US$ million	%	US$ million	%	US$ million	%
NIES	9920	61.75	45372	74.12	57671	61.71	112963	66.17
Hong Kong	9319	58.01	36105	58.98	41466	44.37	86890	50.89
Taiwan	422	2.62	6003	9.81	6682	7.15	13107	7.68
Singapore	179	1.12	2013	3.29	5934	6.35	8126	4.76
South Korea	0	0	1251	2.04	3588	3.84	4839	2.83
ASEAN	79	0.49	1175	1.92	1725	1.85	2979	1.74
Japan	2166	13.48	4062	6.64	7833	8.38	14061	8.24
USA	1817	11.31	4529	7.4	8048	8.61	14394	8.43
Western Europe	1047	6.51	2686	4.39	8897	9.52	12630	7.40
Other DCs	193	1.20	708	1.16	1349	1.44	2250	1.32
Other Asia	124	0.77	1170	1.91	1065	1.14	2359	1.38
East Europe	21	0.13	85	0.14	117	0.13	223	0.13
Latin America	17	0.11	321	0.52	5692	6.09	6030	3.53
Africa	2	0.01	39	0.06	245	0.26	286	0.17
Others	676	4.21	1065	1.74	811	0.87	2552	1.49
All LDCs	10840	67.48	49227	80.42	67325	72.04	127292	74.62
All DCs	5223	32.52	11986	19.58	26126	27.96	43335	25.38
Total	16063	100	61213	100	93452	100	170728	100

Notes: ASEAN includes Thailand, Malaysia, the Philippines and Indonesia. "DCs" are developed countries; "LDCs" are less developed countries.
Source: Years 1983-95 from Chen (1997: Table 2); 1996-99 from authors' calculations based on *China Foreign Economic Statistical Yearbook* 2000.

It is clear from the policy section above that most FDI is concentrated in the coastal provinces, partly as a result of the coastal development strategy and partly because of its proximity and historical linkages with the extended community of overseas Chinese in the NIEs. Between 1986 and 1999, about 90 percent of FDI inflows went to China's coastal region. But considering these flows as a percent of gross domestic investment qualifies this picture somewhat. Table 2

indicates that as a percent of gross domestic investment, FDI is becoming more important as a source of investment for inland regions.

Table 2
FDI as a percent of gross investment by area

Year	Coast	Inland
1986	2.93%	1.06%
1992	11.07%	3.53%
1999	16.04%	6.84%

Source: Authors' calculations based on *China Statistical Yearbook*, various years.

Overall, FDI is strongly associated with international trade in China. In 1995, the trade share of FIEs was 39.1 percent of China's total trade (Chen 1997a: 3-4). In terms of exports alone, the share of total exports produced by FIEs went from less than one percent of China's total exports in 1984 to 27.5 percent in 1993 (Lardy 1994: 72). In the past few years, trade by foreign affiliates accounted for as much as half of China's total trade (UNCTAD 2000: 54). Much of this increasing share is largely a result of the transfer of production of labor-intensive manufactured exports from Hong Kong, Taiwan, and to a lesser extent from other NIEs in East and Southeast Asia, to obtain lower production costs (Naughton 1996: 314), as the timing of China's FDI reform policies coincided with the upgrading of technology and economic restructuring of China's higher income neighbors (Chen 1997a). Timing was certainly not everything; vast networks of overseas Chinese in countries like Hong Kong, Taiwan, Singapore and Malaysia were poised to take advantage of the confluence in policy and economic change.

Despite increases in industrialized country investments into China, which tend to be larger and more capital intensive than investment from developing source countries, FIEs overall tend to be in labor intensive industries (Chen 1996, 1997b; Sun 1998). In an empirical study of inter-industry variation in FDI using data from 1995, Chunlai Chen (1997b) finds a negative and significant relationship between an industry's capital-labor ratio and FDI (as measured by FIE assets). He also finds that the share of FIEs in an industry tends to be higher the more labor intensive the industry, and that the share of FIEs is also higher in fast-growing export-oriented industries.

Using data on China's 3,000 largest FIEs in 1994, which is biased towards larger and more capital intensive enterprises, Chen (1997c) splits industries into labor, capital, or technologically-intensive categories, and counts the number of enterprises in each category.[2] Even

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[2] He uses number of enterprises instead of reported value of capital invested to "avoid problems associated with differences in valuations by date of investment" (Chen 1996: 23).

Categories are as follows. Labor intensive sectors include: food processing; food manufacturing; textiles; clothing and other fibre products; leather and fur; timber processing; furniture; paper and paper products; printing; cultural, education and sports goods; rubber products; plastic product;, non-metal mineral products; metal products; and others.

Capital-intensive sectors include: beverage manufacturing; tobacco; petroleum refining and coking; chemical materials; chemical fibres; ferrous metal smelting and pressing; non-ferrous metal smelting and pressing; and transport equipment.

Technology-intensive sectors include: medical and pharmaceutical; general machinery; special machinery; electrical machinery and equipment; electronics and telecommunications equipment; and instruments and meters. (Chen 1997c: 16-17)

with data biased towards capital intensive industries, of his sample he finds that 52 percent of FIEs are in labor intensive industries, 25 percent in capital intensive and 23 percent in technologically intensive sectors. Among FIEs, Hong Kong is by far dominant across almost all manufacturing industries.

In addition to the investment patterns in manufacturing described above, the real estate sector has also been a significant recipient of FDI in China. Between 1984 and 1987, FDI into real estate increased rapidly, attracting more than a third of inward investment flows and peaking in 1986 at 49 percent of all inflows, mostly at the expense of inflows into industry. This proportion declined in 1988 as a result of tighter macroeconomic policies, but was on the rise again beginning in 1992, the beginning of another economic boom (Chen 1996). In recent years real estate has held steady at around 12 percent of FDI inflows, partly as a result of central efforts to constrain speculative FDI.

III. The Impact of FDI in China on Growth, Productivity, Wages, Employment and Investment

The Chinese government ranks high among the world's boosters for foreign investment. Along with many Chinese economists, the official line is that FDI has played an enormously important role in the development of the new China. Indeed, many observers believe that as FDI began to falter in the late 1990s, the Chinese government accelerated its efforts to join the WTO *primarily* to attract more FDI, presumably because of their belief in its importance for Chinese economic development.

Yet, despite all the scholarly work devoted to the impact of FDI on China by Chinese economists and others, there is still very little hard evidence that FDI has had a large salutary impact on the Chinese economy, and if so, what exactly it has been. To help fill this gap, we have studied empirically the impact on a number of key macroeconomic variables.

A. Growth and Productivity

Two of the areas where there has been a fair amount of empirical work has been on the impact of FDI on growth and productivity. Because China has been so tremendously successful in attracting FDI, this literature is an important part of assessing the promise of foreign investment in a developing country context.

Beginning with growth, applications of the most standard type with some combination of capital and labor explaining GDP growth, find that FDI makes significant contributions to growth (Chen, Chang and Zhang 1995; Sun 1998). These types of studies should be treated with caution, however, because FDI could be capturing the contributions of public policy to growth and therefore overstating its effects. We deal with this issue by constructing the policy variable "liberalization," discussed below. Also, these studies do not address the direction of causality: it is just as likely that GDP growth induces FDI as the other way around. In another study, Shan, Tiann, and Sun (1999) test whether industrial growth in China is Granger-caused by FDI or vice versa. They find a two-way causality between industrial growth and FDI, that both FDI-led growth and growth drawing FDI are supported by the empirical evidence, indicating that the relationship between FDI and growth is more complex than simple studies would suggest.

More complex approaches draw on the insights of endogenous growth theory, emphasizing the indirect effects of FDI on growth through productivity spillovers and forward and backward linkages. These analyses are based on the premise that much of the value of FDI comes in the form of ideas and technological spillovers, as multinationals bring with them managerial know-how, international connections, and technologically advanced production processes, all of which combine to enhance a locale's overall productivity beyond what FDI directly contributes to domestic investment. Shang-Jin Wei (1996), in an analysis of Chinese city-level data covering 1988-90, finds that holding the growth of inputs constant, a one percent increase in the share of foreign-invested firms in city output in 1988 is associated with a 0.32 percent higher growth rate in output, although he does not control for policy. In a different approach that focuses on total factor productivity, Dees (1998) adds a policy variable by controlling for openness, and finds that FDI contributed to Chinese growth only in the 1990s. In a similar analysis, Wei (1995) finds that FDI becomes significant for growth beginning in the late 1980s.

Like the standard growth regression studies, these studies also fail to test for the direction of causality, so it could be that multinationals are attracted to high productivity localities. An exception is the work of Gangti Zhu and Ding Lu (1998), who, applying a Granger causality test to a panel data set of 50 Chinese cities during 1985-95, find a causal linkage between the presence of FDI and productivity growth (as measured by value-added per employee), though they do not discuss the opposite causation, from productivity growth to FDI. They also find that spillover efficiencies from FDI are stronger at promoting labor productivity than in boosting total factor productivity, suggesting that the benefits of FDI in China have come from improvements in human resource allocation efficiency versus overall technological progress.

Gordon Hanson (2001), in an UNCTAD study of the benefits of FDI for developing countries, is not very confident about the findings of these types of studies. He argues that although the early empirical literature was optimistic about the impact of MNCs on host-country productivity, its findings are open to the sorts of criticisms described above about the direction of causality as well as omitted variables, such as policy. He describes more recent and promising work done on the micro-level, where time series data of manufacturing plants provides solutions to these empirical problems by showing how the productivity of domestic plants changes over time in response to the presence of MNCs. Haddad and Harrison (1993), using data for Moroccan manufacturing plants in 1985-89, find a weak negative correlation between plant total factor productivity growth and the presence of MNCs in that sector. Aitken and Harrison (1999), using data on Venezuelan manufacturing plants for 1976-89, find productivity growth in domestic plants is negatively correlated with foreign presence in that sector. Hanson concludes that micro-level data undermines empirical support for productivity spillovers from FDI, perhaps indicating that MNCs confine competing domestic firms to less profitable segments of industry. Clearly, for the case of China, more work needs to be done on the micro-level to assess the productivity spillover effects of MNCs.

Lacking data at the micro level, we choose not to revisit the already large literature on FDI, growth and productivity. Instead, using the insights gained from this work on growth and productivity, we decided to study more directly the impact that FDI has on workers and communities in China. We have refined our inquiry both in terms of questions asked and in accounting for policy in a more direct way. In terms of the former, in the next sections we take up the issue of FDI's effects on wages, employment and domestic investment. In all the empirical

work we undertake, we use panel data from the 29 Chinese provinces over the period 1986-1999.[3] Before discussing the regression analysis, though, we develop a new policy variable that directly measures economic liberalization.

B.   Liberalization

One of the biggest flaws in the previous literature has been its confounding of two processes occurring in China: one is liberalization and the other is openness to trade and foreign investment. While these have often gone hand in hand, they have not always done so. Liberalization – the freeing up of prices and the liberalization of private ownership of business and control over profits – has also been an important part of the Chinese economic story. It is important then to distinguish these two processes and their impact on China's economic development.

Liberalization need not be equivalent to openness. As any scholar of East Asian development will attest, high levels of trade integration can co-exist with strong industrial policies that actively guide development or protect particular economic sectors from the effects of international integration. Empirical studies of China that do control for policy tend to use some measure of openness as a proxy for liberalization and reform. These measures most often reflect to what extent a geographical area has been incorporated into China's Open Door Policy, ranging from SEZ status to whether a locality is situated in the coastal development zone (Dees 1998; Cheng and Kwan 1999, 2000; Wei 1996). But China has exercised a clear industrial policy where trade and FDI are concerned. Its increasing openness to trade and investment has co-existed with strong administrative controls, and so a distinct measure of liberalization is necessary to control for the effects of policy separate from openness.

For the PRC, the transition from a centrally-planned to a market economy – what we are calling its course of liberalization – has been a gradualist and ongoing one. In the early years of industrial reform, the state created a "dual track system" by maintaining clear delineations between production for the central plan and production in the new and growing sphere of market-based industry. By actually freezing the scope of the traditional mandatory balance plan, the state's strategy meant the marketized sector would overwhelm the planned sector over time in terms of economic significance, a process that Barry Naughton has termed "growing out of the plan" (Naughton 1995). Part of this process entailed breaking up the government monopoly in industry and easing entry by nonstate firms. Although some new firms established at this time were state-owned in the sense of being started up by local governments, most of these types of additions came in the 1980s. The vast majority of new firms were "collectively" owned (an ownership category that in practice exhibits a wide variety of attributes and is thus treated as separate from the traditional state sector), but have become increasingly private or joint-venture in ownership structure as reforms have proceeded. In light of this history, a good way to capture liberalization is to use the ratio of state sector output to all industrial output.[4]

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[3] We thank Robert Feenstra for supplying some of these data.
[4] We also tried using the ratio of state sector workers to all employees, which performed in a similar manner to the state output measure, but the latter was more robust overall and made more sense in the employment regressions.   Eventually we hope to improve the liberalization measure by exercising a principal components strategy that combines a number of different measures of liberalization policies, such as the proportion of output subject to the Plan, or the proportion of free prices.

The data we use for this measure and the regressions below are annual provincial-level data between the years 1986 and 1999; 1986 was chosen as a starting point both because that is when policy towards FDI undergoes a marked shift, and because of data availability. Where possible, the data we use comes from the *China Statistical Yearbook* published by the PRC's State Statistical Bureau, as it is regarded as more reliable than the alternative provincial statistical yearbooks that we used as a backup. There is a total of 29 provinces, listed in Table 3 below.[5]

Table 3 shows the liberalization measure (L^2, or state output as a percent of all industrial output) for the beginning and ending of the time period in question, 1986 and 1999, and the percentage change between those two periods. Provinces are rank-ordered, from smallest absolute percentage change in L^2 to largest. In order to get a sense of whether liberalization captures policy variables that are distinct from those that prescribe openness, we have also included average FDI as a percent of total investment (average FDI/I), as well as average trade as a percent of GDP (average T/GDP) over the same time period. If openness is equivalent to liberalization for the Chinese case, one would expect the liberalization variable to simply mirror FDI and trade.

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[5] China is actually divided into 22 provinces, five autonomous regions (Guangxi, Tibet, Xinjiang, Inner Mongolia, and Ningxia), and three municipalities (Beijing, Tianjin and Shanghai). Autonomous regions and municipalities have the same administrative rights as provinces; the entire group will be referred to as "provinces." Tibet has been left out of the dataset.

Table 3
Measures of Liberalization and Openness

Province	L^2, 1986 (percent)	L^2, 1999 (percent)	change in L^2, 1986-99 (percent)	average FDI/I 1986-99 (percent)	average T/GDP 1986-99 (percent)
Xinjiang	82.9	76.2	-8.9	0.7	10.0
Qinghai	81.2	72.8	-11.5	0.16	6.0
Ningxia	78.5	67.0	-17.3	0.68	8.6
Beijing	77.8	65.7	-18.4	10.3	19.9
Jilin	73.0	57.9	-26.2	4.6	16.0
Shaanxi	72.8	55.4	-31.5	5.2	9.9
Yunnan	77.7	55.9	-39.2	1.2	9.3
Guizhou	76.0	53.3	-42.7	1.6	5.1
Heilongjiang	80.4	53.9	-49.2	3.8	11.5
Hainan	81.7	52.0	-57.1	27.7	43.8
Gansu	86.5	50.3	-72.1	1.3	5.5
Shanghai	77.1	44.3	-74.3	11.2	53.4
Jiangxi	70.6	40.1	-75.9	4.8	8.3
Jiangsu	37.0	20.1	-83.7	12.1	23.1
Inner Mongolia	79.6	42.4	-87.8	1.21	8.9
Sichuan	68.8	34.0	-102.0	2.8	6.5
Guangxi	75.7	36.9	-105.3	8.8	12.9
Shanxi	64.3	31.2	-106.5	2.1	7.7
Shandong	52.9	25.5	-107.7	8.4	16.1
Liaoning	66.1	31.5	-110.2	9.5	26.6
Henan	61.3	28.4	-115.8	2.5	5.2
Tianjin	67.0	29.7	-125.4	17.0	42.1
Hebei	56.0	23.7	-136.1	3.4	9.8
Anhui	63.7	25.3	-151.7	3.3	7.3
Hubei	67.4	25.7	-162.0	4.3	8.8
Guangdong	53.5	19.4	-176.1	26.7	88.1
Hunan	67.4	22.3	-202.3	4.6	8.4
Zhejiang	35.0	11.0	-218.1	4.3	18.5
Fujian	53.5	15.1	-255.0	28.6	39.5
Mean	68.5	40.2	-95.5	7.3	18.5
Standard Deviation	12.7	17.8	63.3	8.0	18.3

Note: L^2 is state sector output divided by all industrial output.
Source: Authors' calculations.

But this is clearly not the case. The correlation coefficients between L^2 and average FDI/I and T/GDP are, respectively, -0.396 and –0.299; both are significant at the 95 percent level. While there is a significant relationship between these variables, there is also considerable independence. As such, we elected to use L^2 as a policy variable that measures the impact of liberalization, independent of the impact of openness, in the regressions below.

C.   The Impact of FDI on Wages

Two ways in which FDI can directly help workers is by raising wages and employment. In this section we analyze the impact on wages and in the next section we consider employment.

While wages are often used as an independent variable to explain FDI, it is rare to find the causality running the other way in the empirical literature on FDI in developing countries.[6] But there is a clear causal link. First, FDI may affect labor demand (depending on whether it is greenfield investment or mergers and acquisitions, and on what competitive impact it has on domestic investment), thereby affecting wages. Secondly, spillover effects from potentially higher productivity (and paying) foreign enterprises could raise wages throughout the country. And lastly, because capital is internationally mobile and labor is not, FDI may enhance capital's bargaining power relative to labor, thereby lowering wages (Paus and Robinson 1998).

Turning to the Chinese case, the core model we used is based on the notion that short-term (annual) changes in wages depend on labor demand and supply. Data are panel data for China's 29 provinces between 1986 and 1999 (please see the data appendix for a fuller explanation of the data used).[7] In regression equation (1) below the average provincial wage, measured as the average annual wage for a particular province, is a function of: total investment (I); foreign direct investment (FDI); total foreign trade ($imports + exports = T$); the total available labor force (LF, defined as the population fifteen and over); productivity, where $GDP/employment = q$; and finally the liberalization variable, L^2, the ratio of state sector output to all industrial output. Provincial fixed effects are α's, a time trend has been added to control for uniform shocks, and ε is a serially uncorrelated random error. We use two measures of investment: gross investment (I) and "adjusted investment" ($adjI$), which subtracts FDI from gross investment to get a clearer sense of

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[6] There are of course important exceptions. Using panel data that included both developing and developed countries, Paus and Robinson (1998) find that: FDI has a direct positive impact on real wages; that that impact is especially true in developing countries (but not in developed countries); and finally that this positive impact is true only for the period 1968-87, after which there is some evidence that the threat effect of relocating has had a negative effect on wage growth in industrialized countries. In a comparative study of Mexico, Venezuela, and the United States, Aitken, Harrison and Lipsey (1995) find that higher levels of FDI are associated with higher wages in all three countries, but in Mexico and Venezuela, this association was limited to foreign-owned firms. This lack of evidence of wage spillovers to domestic firms is consistent with the large wage differentials between foreign and domestically-owned firms in these countries.

[7] Unless otherwise discussed, all units are in nominal yuan. This choice was taken because we could not get reliable deflators for the full set of variables, especially trade. It should be noted, though, that when we tried the regressions using the consumer price index on wages and the GDP deflator on everything else, the results were consistent with the nominal numbers. In general, our results with imperfect deflators were similar to the nominal results reported here.

the effects of FDI on wages. The regression is run in logs to get elasticities, and first differences were used to address non-stationary in the variables.[8] The results are detailed in Table 4.

$$(1) \qquad \ln w_{it} = \alpha_i + \beta_1 \ln I_{it} + \beta_2 \ln FDI_{it} + \beta_3 \ln T_{it} + \beta_4 \ln LF_{it} + \beta_5 \ln q_{it} + \beta_6 \ln L_{it}^2 + timetrend + \varepsilon_{it}$$

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[8] A Levin-Lin panel unit root test, used to determine nonstationarity in panel data, was applied. The test may be viewed as an Augmented Dickey-Fuller test for panel data (Levin and Lin 1992). First differencing the variables addresses the fact that the variable means change over time, which could result in spurious correlations if left as is.

Table 4
Wage equations for 29 provinces, using data for 1986-1999
(Estimation with first differences and fixed effects; dependent variable: ln average wage)

Variable	I	IA	II	IIA	III	IIIA	IV	IVA	V	VA
$\ln I_{t-1}$	0.255* (12.27)		0.225* (10.24)		0.212* (8.96)		0.198* (7.73)		0.193* (7.10)	
$\ln adjI_{t-1}$		0.224* (10.18)		0.198* (8.97)		0.181* (7.94)		0.168* (6.90)		0.160* (6.29)
$\ln FDI_{t-1}$			0.019* (4.42)	.025* (5.92)	0.020* (4.58)	0.025* (5.97)	0.019* (4.31)	0.024* (5.44)	0.019* (4.35)	0.024* (5.48)
$\ln T_{t-1}$					0.021*** (1.37)	0.380* (2.47)	0.020 (1.17)	0.035** (2.10)	0.021 (1.22)	0.036** (2.18)
$\ln LF_{t-1}$	-0.320** (-2.10)	-0.410** (-2.12)	-0.331** (-2.22)	-0.356** (2.32)	-0.334** (-2.25)	-0.361* (-2.38)	-0.318** (-2.06)	-0.339** (-2.16)	-0.327** (-2.11)	-0.350** (-2.22)
$\ln q_{t-1}$									0.047 (0.79)	0.075 (1.24)
$\ln L^2$							-0.073** (-2.31)	-.091* (-2.87)	-0.070** (-2.20)	-0.086* (-2.70)
R^2	0.338	-.263	0.379	0.339	0.386	0.356	0.394	0.371	0.400	0.376
N	346	346	335	335	334	334	306	306	304	304

T-statistics in parentheses.
*   Significant at the 99 percent level.
**   Significant at the 95 percent level.
*** Significant at the 90 percent level.

Table 4 above presents a series of regressions that build up to the full model in regressions V and VA. Regressions I-V use the gross investment measure; regressions IA-VA use the adjusted investment measure. The potential for simultaneity – FDI, investment or trade could just as reasonably be argued to be the result of wage changes as the source of them – induced us to do some Granger causality testing. The results, which indicated mutual causation between these variables and wages, were not really satisfactory owing to the short time series and limited degrees of freedom. But the exercise did prompt us to use some lagged values on the right-hand side to partially address this problem.

The regression results indicate that FDI has a statistically significant and positive impact on wages that is not significantly affected by the model's other variables. Looking at the full model with gross investment (regression V), a one percent increase in FDI increases wages by about 0.02 percent. Put another way, if FDI increases by one standard deviation from its mean, wages will increase by 1.32 percent. In regression VA, the coefficient increases slightly so that a one percent increase in FDI increases wages by about .025 percent. The actual effect probably lies somewhere between these two figures, as some small proportion of FDI is comprised of financial flows that are not counted as a part of gross investment.

Gross investment packs a lot more punch: in regression V a one percent increase in investment raises wages by 0.19 percent - an investment increase of one standard deviation from the mean raises wages by about 22 percent. Looking at the adjusted investment measure in VA lowers this estimate: a one percent increase in domestic investment raises wages by 0.16 percent. But it is still a much larger impact than FDI.

Looking at the rest of the variables, we will confine the discussion to the regressions that use adjusted investment, keeping in mind that the true results are somewhere in between the regressions that use the gross and adjusted investment measures. Trade has increased the overall demand for labor in China, thereby raising wages: in regression VA, a one percent increase in trade raises wages by .036 percent. Put in terms of standard deviations, an increase of one standard deviation raises wages by 2.9 percent. The labor force variable, reflecting a reserve army effect where greater supplies of labor drive down wages, has the expected effect, and it is notably sizeable, suggesting that creating ample employment for China's growing population is a validly key concern for policy makers. Productivity has the correct sign but is not statistically significant, probably due to noise in the measure.

The results on liberalization are interesting for a couple of reasons. First, including liberalization does not affect the other variables that one might posit are picking up liberalization effects: neither FDI nor trade, sometimes treated as proxies for liberalization, are altered significantly by the inclusion of the liberalization variable. At least for the Chinese case, then, these openness measures are not picking up the effects of liberalization on the Chinese economy. Secondly, there is a consistently positive and statistically significant relationship between liberalization and wages. If the proportion of state sector output to all industrial output decreases by one percent, wages will increase by 0.086 percent; if L^2 declines by one standard deviation from the mean, wages will increase by 3.06 percent.

This result suggests that the freedom from wage controls, and the overall increase in incomes (especially rural) that came with liberalization, were important positive benefits of the economic reform program begun in 1979. But it is important to recall that we are only measuring money wages. The substantial non-cash benefits that can come along with a state sector job, such as housing allowances, still render these jobs among the most prized, at least for less educated or lower-skilled workers who would otherwise have trouble accessing workplace benefits. Some interesting work on the impact of FDI on relative wages in China illustrates this point. In a study that compares state and FIE sector wages for unskilled workers, it was found that after including non-wage benefits like pensions, housing and medical care, state sector jobs were much better for unskilled workers who had been assigned or expected to receive public housing (Zhao and Xu 2000).[1] The same estimate was not done for the college-educated, but it was hypothesized that wages between the state and foreign sectors for skilled workers would be much smaller since FIEs offer good benefits packages to the college-educated.

The work of Yaohui Zhao (2000) bears on this issue. He argues that because of the segmented nature of labor markets in China, FDI does indeed raise the relative wages of skilled workers, but not because FIEs demand more skilled workers. Using urban household survey data in 1996, Zhao finds that education is used to access the privileged state sector. Unskilled workers are thus more abundant in the unprivileged or informal sectors, giving FIEs easy access to unskilled workers. Conversely, FIEs must compete with the state sector for skilled workers, bidding up the relative wages of skilled workers in the foreign sector. He also finds that the proportion of skilled to unskilled workers is similar in the state and foreign sectors, suggesting that FIEs do not employ more skilled labor than state firms, casting doubt on the notion that relative wage increases are a result of FIEs enjoying higher productivity. While FIEs do pay higher wages (including bonuses and cash subsidies) than state firms, these higher wages are unevenly distributed among workers of different educational levels. Including noncash benefits such as housing, less educated workers earn less in FIEs than in state enterprises, but more educated workers earn more.

Summary

In sum, then, we do find empirical evidence that over the last decade and a half, FDI has raised wages in China, but the impact is small in relation to the effects of domestic investment and to a lesser extent liberalization. The impact of foreign trade on wages is also significant, both statistically and economically. In fact, this latter variable might be picking up some of the impact of FDI on wages, since, as we discussed above, a great deal of FDI was directed toward the export sector. Even if one adds up the effects of these two variables, implicitly attributing all the export effect to FDI, the sum of the coefficients on FDI and trade is about 0.06, which is about 1/3 of the impact of investment on wages (0.16). Of course, this is an overestimate of the FDI effect because not all trade is due to FDI and foreign invested enterprises (though a significant amount is, perhaps as much as 60 percent).

D.   Employment

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[1] Yaohui Zhao and Jianguo Xu. 2000. "Earnings Differentials Between State and Non-State Enterprises in Urban China," mimeo, cited in Zhao (2000: 8).

One of the key reasons that local officials are so interested in attracting FDI in China is employment creation. With economic reforms, a growing population, and the rising incidence of layoffs in the state sector, there is tremendous pressure on local authorities to stave off the social unrest that will result from an increasingly serious unemployment problem, particularly in urban areas. While official urban unemployment rates stand at about five percent, scholars estimate that the true unemployment rate could be two to five times that (Jiang 2002; Minqi 2001).[2]

Whether FDI has actually contributed to employment creation in China is an open question, and so we take up this issue empirically here. The regression model is presented in equation (2), and, as in the section above, data are panel data for China's 29 provinces between 1986 and 1999. Employment, measured as the total number of remunerated jobs (including the self-employed) at year-end in a particular province, is a function of: per capita output, GDP/pop; investment, I (here again we use two measures of investment, gross and adjusted investment, which subtracts FDI from gross investment); foreign direct investment, FDI; total foreign trade ($imports + exports = T$); and liberalization, L^2, the ratio of state sector output to all industrial output. As in the wage regressions, provincial fixed effects are α's, a time trend has been added to control for uniform shocks, and ε is a serially uncorrelated random error. The regression is run in logs to get elasticities, and first differences were used to address non-stationarity in the variables. The results are detailed in Table 5 below.

(2) $\ln emp_{it} = \alpha_i + \ln(GDP/pop)_{it} + \ln I_{it} + \ln FDI_{it} + \ln T_{it} + \ln L^2_{it} + timetrend + \varepsilon_{it}$

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[2] Herein lies the reason that we did not incorporate measures of unemployment in any of our econometric work. Official rates are widely believed to be significant underestimates.

Table 5
Employment equations for 29 provinces, using data for 1986-1999
(Estimation with first differences and fixed effects; dependent variable: ln employment)

Variable	I	II	IIA	III	IIIA	IV	IVA	V	VA
$\ln GDP/pop$	0.033** (1.84)	0.003 (0.11)	0.012 (0.54)	0.000 (-0.01)	0.006 (0.27)	0.000 (0.01)	0.004 (0.16)	-0.020 (-0.79)	-0.020 -0.78
$\ln I$		0.025** (2.12)		0.023** (1.82)		0.018*** (1.36)		0.017*** (1.29)	
$\ln adjI$			0.019** (1.69)		0.018*** (1.54)		0.015 (1.18)		0.016*** (1.34)
$\ln FDI$				0.002 (0.91)	0.003 (1.21)	0.002 (0.94)	0.003 (1.17)	0.002 (0.97)	0.003 (1.16)
$\ln T$						0.018** (2.16)	0.019** (2.36)	0.017** (2.03)	0.017** (2.16)
$\ln L^2$								-0.048* (-3.04)	-0.050* (-3.15)
R^2	0.165	0.166	0.162	0.173	0.171	0.194	0.193	0.218	0.219
N	403	373	373	361	361	332	332	332	332

T-statistics in parentheses.
* Significant at the 99 percent level.
** Significant at the 95 percent level.
*** Significant at the 90 percent level.

Based on these regression results, whether one uses gross or adjusted investment, FDI has no independent effect on employment. And even though using the adjusted investment measure does improve FDI's significance somewhat, the potential impact of FDI on employment is nonetheless very small. The force of gross and adjusted investment declines across regressions I-VA, and once again, we believe that the actual coefficient lies somewhere in between the two estimates of investment. Looking at the full model in VA, a one percent increase in adjusted investment will increase employment .016 percent, meaning that an increase of one standard deviation from the mean raises employment by 1.7 percent. A one percent increase in trade has a similar impact on employment as adjusted investment, about .017 percent, but an increase in trade of one standard deviation from its mean increases employment by less than investment: 1.4 percent. Still, this finding is a very significant one: trade has had a significant and positive impact on employment in China, much more so than FDI.

The results on the liberalization variable are consistent with the notion that all else equal, nonstate enterprises have generated more employment than state enterprises since reforms began. According to the regression results in VA, a one percent (standard deviation) increase in state output as a percent of all industrial output will decrease employment by 0.05 percent (1.8 percent). This result reflects two things: that state firms tend to be more capital-intensive than other forms of ownership that have come about as a result of market reforms, and that state firms have been shedding workers in recent years in response to the widespread impression that these firms are overstaffed (the state sector shed nearly one-quarter of its workforce between 1995 and 1999 (Zhao 2001: 2)). An important caveat must be noted before this result can be taken as a basis for making predictions about liberalization and the future of employment. First, that liberalization has been associated with job creation says nothing about the relative quality of jobs. Although there is clear evidence that liberalization is associated with higher wages (as is FDI), there is also evidence that other measures of job quality such as security and benefits are better in the state sector, at least for less educated workers (Zhao 2000, 2001). That said, there is no evidence that FDI has been a good source of employment creation, except, perhaps in so far as it has led to exports.

The Role Of FDI In Exports

The importance of FDI in employment generation through exports, however, is worthy of further scrutiny. It is true that the share of FIE's in exports has been growing rapidly: their exports increased from less than two percent of total Chinese exports in 1986 to 48 percent in 2000 (UNCTAD 2002: 155). However, it is important to note that their share of imports rose during the same period from six percent to 52 percent (Ibid). As we noted above, since FIE's are more capital intensive than local firms, their role in job creation is modest. For example, in 1996, these firms employed only 5.4 million workers, or about 0.8 percent of the total labor force (Ibid). Thus, taking into account the role of exports in employment creation is not likely to modify our overall conclusion that FDI has not generated as much employment as other activities.

When combined with the analysis of its impact on investment in the next section, the overall employment generating effect of FDI is placed in further doubt.

E. Crowding In/Crowding Out

In both the wage and employment regressions, FDI is included on its own as well as part of gross investment in order to separate the effects of FDI as a distinctive form of investment –

one that may tend to pay higher wages or create more (or less) employment than other forms. But in order to fully appreciate its role, the relationship between FDI and domestic investment must be investigated, as it is not necessarily the case that FDI merely adds to labor demand as a part of gross investment. FDI might encourage or crowd in domestic investment, as when there are strong backward or forward linkages created by new foreign firms. Or, FDI could crowd out domestic investment, as when foreign firms compete with domestic firms and drive them out of business.

Using panel data for the period 1970-96 in three developing regions, Asia, Africa and Latin America, Manuel Agosin and Ricardo Mayer (2000) did an econometric study of whether foreign investment crowds in domestic investment. Their results indicate that in Asia, and to a lesser extent in Africa, there has been strong crowding in of domestic investment by FDI. In Latin America, FDI has had a strong crowding out effect. China is one of the countries in their study, and they find that FDI has had a "neutral" effect on domestic investment; that is, it has neither crowded in nor crowded out domestic investment. One problem with this study for China is the time period under consideration. China did not allow FDI until 1979, and even then policy restrictions were strict until the mid-1980s, so the China results deserve closer analysis.

In terms of this type of work on China, Haishun Sun (1998) does a simple regression analysis of the determinants of domestic investment in ten coastal provinces between 1983 and 1995, when about 90 percent of FDI targeted China's coastal region. Using income per capita (as a proxy for domestic savings), FDI, and other forms of foreign capital, he finds a strong significant positive correlation between FDI and domestic investment. Such a simple approach is unconvincing, however, as the problem of omitted variables (such as measures of policy) throws the causal link between FDI and domestic investment into serious question.

Among qualitative studies of the relationship between FDI and domestic investment in China, the sentiment is less sanguine than Sun's. Yasheng Huang (1998) argues that FDI probably crowds out domestic investment because FIEs tend to be highly leveraged and compete with local firms for domestic financing. This leveraging is a direct result of policy incentives that grant preferred status to FIEs – Chinese partners are more motivated to qualify for FIE status than to ensure adequate financial contributions from foreign partners. Thus the equity contribution by foreign investors often falls short of what is specified in the contract, and Chinese partners end up borrowing to cover the shortfall (Huang 1998).

Nicholas Lardy, in a classic analysis of China's economic reform process, claims that rather than financing increased levels of investment, China's substantial capital inflows have been used for three other purposes: (1) to increase the foreign exchange holdings of China's Central Bank, which in the three years between 1994 and 1996 increased by US$83.3 billion, and in 1997 by US$35 billion; (2) to provide funds for capital flight;[11] and (3) to a much lesser extent, to finance investment abroad by Chinese firms (Lardy 1998: 191-92). Lardy concludes that, despite China's tremendous success in attracting FDI, it cannot be counted on to fulfill China's substantial investment financing needs.

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[11] Lardy notes that the World Bank believes that large unexplained errors and omissions in China's Balance of Payments, almost US$18 billion in 1995 and almost US$15 billion in 1996, are a sign of large unrecorded capital outflows (Lardy 1998: 191). Frank Gunter (1996) estimates capital flight from China during 1984-94, and his middle estimate is that over the sample period, total accumulated capital flight was somewhere between US$50 billion and US$175 billion. In 1994, his estimate was US$20-US$35 billion, indicating there has been an upward trend (Gunter 1996: 93).

We decided to test these conclusions by rerunning Agosin and Mayer's (2000) econometric study on China, using our province-level panel data set for the years 1986-99. The investment equation is as follows:

(3) $\quad I_{it} = \alpha_i + \beta_1 FDI_{it} + \beta_2 FDI_{i,t-1} + \beta_3 FDI_{i,t-2} + \beta_4 I_{i,t-1} + \beta_5 I_{i,t-2} + \beta_6 G_{i,t-1} + \beta_7 G_{i,t-2} + YD + \varepsilon_{it}$

where: $I =$ gross investment/GDP; $FDI =$ FDI/GDP; $G =$ GDP growth; $YD =$ year dummies; α's are provincial fixed effects; and ε is a serially uncorrelated random error. Since we are interested in the long-term effects of FDI on investment, the formula for the relevant coefficient (beta hat long-term):

(4) $\quad \hat{\beta}_{LT} = \dfrac{\sum\limits_{j=1}^{3} \hat{\beta}_j}{1 - \sum\limits_{j=4}^{5} \hat{\beta}_j}$

If we cannot reject that $\hat{\beta}_{LT} = 1$, there is no crowding in or out: an increase in FDI raises total investment exactly by the same amount. If $\hat{\beta}_{LT} > 1$, there is evidence for crowding in. Likewise, if $\hat{\beta}_{LT} < 1$, there is evidence for crowding out. Table 6 below lists the results.

Table 6
Investment equations for 29 provinces, using data for 1986-1999
(Estimation with fixed effects; dependent variable: gross investment, I)

Variable	
FDI	0.523* (3.69)
FDI_{t-1}	-0.212 (-1.14)
FDI_{t-2}	-0.234** (-1.67)
I_{t-1}	0.878* (15.70)
I_{t-2}	-0.294* (-5.24)
G_{t-1}	0.109* (4.03)
G_{t-2}	-0.003 (-0.12)
Adjusted R-square	0.771
Observations	343
$\hat{\beta}_{LT}$	**0.185** (0.30)

T-statistics in parentheses.
* Significant at the 99 percent level.
** Significant at the 95 percent level.

Using a bootstrap method[12] to assess the statistical significance of $\hat{\beta}_{LT}$, we found that we could not reject the hypothesis that it was statistically equivalent to zero; the 95 percent confidence interval for of $\hat{\beta}_{LT}$ is (-0.445, 0.696), and therefore does not include 1. We therefore conclude that there is evidence that FDI had a negative impact on Chinese domestic investment. There is strong evidence that FDI crowded out domestic investment during the late 1980s and 1990s in China, a finding consistent with that of Huang (1998) and Lardy (1998).

This is a very significant conclusion for assessing the overall promise of FDI to positively affect China's economy. Although it has contributed to wage increases its tendency to crowd out domestic investment confirms its role in employment creation has not been a positive one.

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[12] Bootstrapping is a Monte Carlo method designed to produce estimates of the bias and variance of an estimator by taking repeated random subsamples of the data, accumulating estimates of the quotient $\hat{\beta}_{LT}$, and using the standard deviations of those estimates to get the overall variance of the bootstrap estimate (Kennedy 1993; Peters and Freedman 1984).

IV.   Bidding for Investment

Bidding for investment is certainly not unique to China. For a number of years, economists and policy makers have studied and even decried the so-called "War Between the States," a popular name given to the U.S. inter-state competition for investment and jobs (Federal Reserve Bank of Minneapolis 1994; Burke and Epstein 2001). Moreover, an enormous amount has been written about tax competition in the European Union as well as internationally among nations. But the level to which this "War Between the Provinces" has risen in China is, perhaps, surprising, even to those well-schooled in the many paths of capital mobility.

This point was brought home to us rather starkly when one of us interviewed a Chinese official in a Northeastern coastal city, Dalian, about foreign investment.[13] This official is the associate director of one Dalian's special economic zones, in this case, a high tech export processing zone. We asked him, "Who is your greatest competitor when it comes to trying to attract foreign investment?" expecting the answer to be Vietnam, or Malaysia or, perhaps, Beijing. But his answer startled us: "Our biggest competitor is the export processing zone down the street."[14] Not only does one province or one town compete with another; but in China, there are numerous zones – export processing zones, high tech zones, industrial zones – all of which compete for foreign investment. The result is cut throat competition.

The nature of this competition takes a number of forms even while the central government tries to limit and regulate it, primarily in order to preserve its tax revenue and also to promote its industrial policies. The central government determines the tax rates that foreign invested enterprises must pay. The various special zones established with the central government's permission at the local level offer preferential tax rates, especially for desired types of investments, but these rates are set by the central government. Despite this central government control, holding constant the amount of investment, government tax revenue will fall as there is more foreign investment getting preferential rates. While much of this revenue goes to the central government, there is a complex revenue sharing mechanism which sends some of it back to the provinces (Wong 2000). Presumably, provincial governments therefore receive a diminished amount of tax revenue to the extent that the amount going to the central government falls. (Wong 2000).

But there are other, indirect and potentially costly ways in which this inter-zone, inter-city and inter-provincial competition occurs out of the reach of the central government's control. According to an official whose job it is to attract foreign investment to a city in Southeastern China, "Under the general policies, the local and municipal governments can do some [things to attract companies]. For example, the local and municipal governments can reduce or return the taxes enjoyed by local governments to the enterprises which [the] city [is] eager to attract, including the income tax and value added tax [which] belong to local and municipal governments (25 percent of the total VAT)."[15] This potential decline in VAT revenue can be significant.

In addition, perhaps the most widely used incentive under the control of local and municipal governments is the provision of free or highly subsidized land, subsidies for electricity and other utilities, and sometimes, the building of roads and other infrastructure projects supporting the factory sites. According to this same official, "Subsidies for the land are the most used policies by municipal and local governments. Nearly for all projects, governments give the

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[13] These interviews were carried out in the PRC by Gerald Epstein between August, 2000 and July, 2001.
[14] Interview, August, 2000, Dalian, PRC.
[15] Interview with Foreign Investment Officer, Fujian Province, May, 2001.

subsidies for the land. The selling price of land is lower than the development cost. And for the local government encouraged projects, the price is cheap, [sometimes close] to zero." The official adds that "Local governments [have] less control over [the] price of water and energy. But they can reduce or exempt some fees charged by governments."[16]

Secondary literature confirms this interview information. The so-called "five connections and one leveling" (wutong yipping) – connecting roads, telecommunications, water, electricity and ports and leveling of sites – were the main methods used to attract foreign investment to Shenzen, an SEZ near Hong Kong (Yeh 2000: 52). These methods have been used in many other parts of the country as well. Once again, these can cost the government significant amounts of money. They can also lead to enormous waste. Literally hundreds of economic and technical development zones (ETDZs) have been set up around the country to attract foreign investment. Many are established in small towns and villages. Evidently, while some are successful, "most are left idle because the flow of foreign investment does not materialize, leading to much waste of valuable land resources" (Yeh 2000: 56).

The other ways in which competition occurs is by promising good political connections so that companies will be able to cut through the various types of red tape that the government throws at them. It is not uncommon for foreign investors to be wined and dined by top government officials or their children with the implicit promise that these connections, or *guanxi,* will help pave the way to an easier corporate life.[17]

Why are these government officials so anxious to attract FDI? One reason must surely be the fact that they believe it has a positive impact on their communities. But another is that local officials who attract high levels of FDI have a much greater possibility of being promoted in the government and/or party.[18] Furthermore, and not to be underestimated for its appeal, is that attracting foreign investment with an offer to give large subsidies and streamlined regulatory treatment create enormous opportunities for graft and corruption (see more on this below).

One result of this competition may be an erosion of provincial government revenue, at least in the short run. As we have seen, this loss can result from lower tax rates officially offered to investors investing in an economic zone, as well as the loss of fees and other income from the land and other assets.

To assess the impact of FDI on tax revenues, we returned to our panel and studied the evolution of provincial government revenue using regression methods.

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[16] Ibid.

[17] Interview with FIE business manager, Xiamen, Fujian, PRC, April, 2001. In another interview, a foreign investment official reports: "[We] reduced the regulations and procedures to improve the efficiency of governments; this is an important policy. Xiamen's municipal government set up the Xiamen foreign investment executive committee to examine and approve the foreign investment projects. Then the enterprises only need to apply to the committee and not more departments." Interview, May, 2001.

[18] Interview with Xiamen official, May, 2001.

Table 7
Government revenue equations for 29 provinces, using data for 1986-1999
(Estimation with first differences and fixed effects; dependent variable: log of provincial tax revenue)

Variable	I	II	III	IV	V	VI	VII	VIII
$\ln GDP$	0.114 (0.99)		-0.013 (-0.09)					
$\ln GDP_{t-1}$		-0.069 (-0.57)		0.071 (0.47)	0.166 1.06	0.026 (0.16)	0.01 (0.06)	0.066 (0.35)
$\ln adjI$			0.117*** (1.64)					
$\ln adjI_{t-1}$				-0.175** (-2.34)	-0.167** (-2.18)	0.210* (-2.76)	-0.209* (-2.73)	-.209* (-2.49)
$\ln FDI_{t-1}$					-0.036* (-2.75)	-0.036* (-2.76)	-0.036* (-2.75)	-0.035* (-2.49)
$\ln T_{t-1}$						0.172* (3.44)	0.171* (3.42)	0.175* (3.24)
$\ln L^2$								0.091 (0.88)
$\ln L^2_{t-1}$							-0.028 (-0.29)	
R^2	0.006	0.004	0.011	0.020	0.045	0.082	0.082	0.082
N	396	396	366	338	327	326	326	326

T-statistics in parentheses.
* Significant at the 99 percent level.
** Significant at the 95 percent level.
*** Significant at the 90 percent level.

Table 7 estimates the impact of domestic (adjusted) investment, foreign direct investment, trade and liberalization on the provincial government revenue. All variables are in logs and are measured in first differences. The regressions show that government revenue is negatively associated with both domestic and foreign direct investment. On the other hand, trade is positively associated with government revenue. These results are certainly consistent with the argument that bidding for investment – both foreign and domestic – appears to *reduce* provincial government revenue. This seems to be a significant cost of the de-centralized nature of the investment bidding process. As with the other regression results we have presented, however, this conclusion is tempered to some extent by the positive impact of trade. To the extent that FDI contributes to trade, then, indirectly it might be contributing to tax revenue. But, these results suggest that in order to measure the positive impact of trade, one might need to subtract the bidding costs associated with attracting investment. It also suggests that as foreign investment becomes less and less export oriented, as we discuss below, these trade related gains are likely to be significantly eroded.

Corruption

We suggested in the introduction that one way in which the possible social gains from FDI can get dissipated is through graft and corruption. It is certainly the case that most Chinese people *believe* that corruption is a very large problem. Moreover, there have been some very large and

well publicized corruption scandals in China in recent years, including one in Xiamen, Fujian province in which dozens of local officials were convicted of smuggling, and more than ten were given the death penalty.

But, as far as we know, there have been no publicized arrests of officials for corruption in the bidding process for foreign investment. However, there is little doubt that such corruption is widespread. Daniel H. Rosen interviewed almost 100 expatriate managers of MNCs in China in the late 1990s. Rosen reports that many managers complained of bribery and bribery related payments to achieve approval of investments or win contracts (Rosen 1999: 218-26). He suggests, moreover, that having an effective and well connected patron in China, to help firms navigate around the maze of regulations, was perhaps the most important determinant of business success (ibid.).

Shang Jin-Wei (2000), in his provocatively titled paper, "Why Does China Attract So Little Foreign Investment," claims that given China's income and population, the amount of foreign investment it attracts falls well below the cross-country regression line which would predict the quantity that 'ought' to flow there. He argues the difference is even greater if one considers that a significant amount of investment is not really foreign: it is Chinese investment, round-tripped through Hong-Kong (see the discussion above). He attributes the low level of foreign investment to corruption and other government induced barriers to foreign investment.

Either way, it does seem that corruption may well be a costly institution which is reducing the benefits of foreign investment for the Chinese population. Indeed, to the extent that this corruption is an integral part of the bidding process for FDI in this decentralized environment, it should be seen as a further cost of FDI itself.

IV.   China's Entry into the WTO

In November 1999, the Chinese and U.S. governments agreed to accession terms by which China could join the WTO. This agreement set the tone for agreements that China made with other countries over the ensuing year and a half. In the fall of this year, after further intense negotiations, China finally was admitted into the WTO. The basic terms of the agreement are as follows (Lardy 2002; U.S. Trade Representative):

- Agricultural tariffs fall to an average of 17.5 percent by 2004, liberalization of imports of major agricultural commodities, import and distribution rights granted to foreigners;
- Average tariff on industrial products falls to 9.4 percent by 2005, including elimination of all tariffs on high-technology products; auto tariffs fall from 80-100 percent to 25 percent by 2006;
- Eliminates import quotas and licensing requirements by 2005;
- Grants import and distribution rights to foreign corporations, allows them to set up wholly-owned distribution, sales (including retail), shipping, and service networks over a three year phase-in period;
- Financial services - banking, insurance, and securities - increased access phased in over five years, culminating in full market access in all activities and regions, and national treatment for foreign banks; minority ownership in domestic securities firms and most insurance business;
- Telecom - ends ban on foreign investment, allows 50 percent ownership in value added (internet) and paging services within two years after accession; 49 percent ownership in mobile telecom, domestic and international services phased in over five to six years;

- Other services - increased market access for professional services, including accounting, consulting, engineering, medical, and information technology;
- Commits China to implement and enforce international standards on protection of intellectual property; provides for increased access and distribution rights for motion pictures, music, and software;
- United States agrees to extend China PNTR as a WTO member, phase out quotas on imports of Chinese textiles and apparel by 2004 (all other sectors already are fully open as a part of annual extension of NTR).

Safeguards and Protections for the United States
- Allows the United States to continue to treat China as a non-market economy in anti-dumping cases for 15 years after accession; this methodology generally results in the application of larger anti-dumping margins against Chinese imports;
- Permits the United States to implement a product-specific safeguard to prevent large import surges from China; this safeguard, which allows the United States to impose restrictions on imports from China more easily than imports from other WTO members, would remain in effect for 12 years after China's WTO accession;
- Allows the continuation of a safeguard mechanism to prevent textile import surges until the end of 2008.

As these last points make clear, the Chinese government made many concessions to join the WTO, and indeed, made more concessions than virtually all other countries that joined (Lardy, 2002). Why were the Chinese leaders so anxious to join? Many have argued that the principle reason was because they believed that joining would accelerate the flow of foreign investment into China and that foreign investment has been the engine of growth. This certainly seems to be true for some of the policy makers.

But, another view is more compelling. As an official of the Ministry of Foreign Trade and Cooperation (MOFTEC), perhaps the most active supporter of WTO admission in the government, pointed out in an interview, the most important reason to join the WTO is to keep the process of liberalization moving forward.[19] China is entering a difficult period as it tries to move further down the capitalist road. As state-owned enterprises continue to lay off workers, social unrest and political pressure to reverse the liberalization process is certainly bound to increase. Having signed an international agreement to liberalize further, it will be difficult for these political forces to block further liberalization. Foreign investment is an important aspect of this process, but it is not the main goal of joining.

WTO, FDI and Employment Generation

As we indicated above, one of the motivations for joining the WTO is to attract more FDI, partly to counterbalance increasing unemployment, especially in the state sector, as liberalization proceeds and state firms face increasing competition both from domestic and foreign firms. However, as we have shown, the past role of FDI in employment generation does not bode well for this strategy.

Some have argued, though, that WTO entry will increase FDI's impact on employment because China will have greater access to export markets. But as is shown in UNCTAD (2002)

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[19] Interview with MOFTEC official, Beijing, April, 2001.

and other studies, the role of exports in providing alternative employment is severely constrained by the sheer size of the Chinese labor force. To absorb a large amount of Chinese labor, the Chinese world export share would have to climb to politically unsustainable levels in a number of industries.

Moreover, the role of FDI in the balance of payments may also be a constraint on the success of this strategy. UNCTAD (2002) reports that profits earned by FIE's in China exceed their export surpluses by a wide margin (UNCTAD, 2002). If these profits are exported back to the home country, then the inflows of new FDI, over the long term, may significantly harm the balance of payments.

Finally, FDI not only generates exports; it also generates a great deal of imports. China's labor-intensive exports are also import-intensive. As a result, this foreign-invested export sector is not a high value-added sector (UNCTAD, 2002, p. 155-156). The key, then, for FDI to play a substantial role in improving labor outcomes would have to involve upgrading FDI – to produce more domestic capital goods and to generate more inputs and value added at home.

However, it is precisely this ability to restrict FDI to higher value added channels which will be constrained. WTO's rule of national treatment means that China will have to eliminate performance requirements over FIE's unless it can extend them to domestic firms as well. Moreover, there will be pressure on the Chinese government to extend tax breaks and other special treatment from FIE enterprises to local ones, further undermining the Chinese government's ability to conduct industrial policy and generate the upgrading of FDI and domestic investment as well. Of course, such upgrading will occur to some extent through general market forces. But the Chinese government will not be able to accelerate and channel this process as it has done relatively successfully for the last several decades.

V.   Conclusion: Conflict, Cooperation and the Role of FDI in China's Future

Our econometric results suggest that the direct impacts of FDI in China on employment and wages are relatively modest, certainly much less powerful than the impact of domestic investment and exports. We also provide strong evidence that FDI crowds out domestic investment, and is associated with a decline in provincial tax revenue. In combination with the questionable results on economic growth and productivity that we discussed earlier in the paper, these findings should certainly temper any unqualified cheerleading for FDI.

In addition, these lackluster findings on the benefits of FDI are not what one would expect if China's vast potential consumer market afforded it significant bargaining power relative to MNCs. One would expect results indicating that FDI leads to at least some of the following: higher domestic tax revenue; higher wages and/or significantly more employment; or greater technology and productivity spillovers. Instead, our results suggest the bargaining power provided by China's 1.3 billion consumers, in the context of a highly decentralized political system that is rife with corruption, is far from being realized. The lesson for other developing countries, most with only a fraction of China's potential bargaining power, is that FDI does not proffer the automatic boost to development that its proponents claim.

Our results also suggest that liberalization and exports have had a positive impact on wages and employment in China. So, it does appear that China's policy of managed opening, combined with industrial policy and an export orientation, have generated economic growth. In

terms of exports, FDI has undoubtedly played an important role, but this impact has been tempered by the growth of imports and the low level of value added in these industries. Still, supported by periodic expansionary macroeconomic policies and controls of speculative capital flows, these policies resulted in significant successes in promoting economic growth in China.

In terms of global conflict and cooperation, this low wage, labor intensive export orientation, to a significant extent funded and organized by foreign investment, is also reaching its economic and political limits. Politically, there is opposition from countries in the developed world to continued huge trade surpluses with China. Economically, these low wage platforms hold little promise for generating high wage, high value added jobs.

China's entry into the WTO was an attempt by China's leaders to sustain economic growth by locking in and expanding its policy of economic liberalization, thereby making it difficult for opposition forces within the country to block the next, more difficult stages as China travels down the capitalist road. As part of this plan, the leadership attempted to maintain high levels of FDI, this time with investment that would generate more technology transfer and higher value added jobs.

But, in return, China has had to promise to give full access to its market to foreign firms, to tie its hands in its ability to carry out industrial policy, and finally to pay huge costs in terms of intellectual property rights. This will severely limit China's ability to generate the technological upgrading required to generate more value added and employment. Moreover, with the financial liberalization that is very likely to follow the entry of foreign financial firms, the dismantling of credit allocation and capital controls is almost certain to follow. In short, the major tools which the Chinese government has been able to use to manage its economy will be compromised once the WTO agreements are fully implemented.

This appears to be highly problematic for the Chinese people. What about for the nature of conflict versus cooperation for workers in other parts of the globe?

China's opening and entry into the WTO, to the extent that it will enhance the value of China as a location for foreign investment, might severely reduce investment elsewhere in Asia, and thereby increase the already intense competition for investment there. However, given the low tariffs on Chinese goods, this result is far from certain. It still might be cheaper for firms to locate in Vietnam, for example, and export to Southwest China. This will depend on how investment friendly the Vietnamese are compared with the local party officials across the border. It will also depend on the intricacies of the Multi Fiber Agreement and where quotas are available.

It also will depend on the relative labor costs: China has lower wages than most developing and developed countries, but its labor costs, taking into account productivity, is not necessarily lower. In manufacturing, for example, they are lower than many, but not all developing countries. For example, its costs are higher than Singapore, but lower than Bolivia, Chile and Mexico (UNCTAD, 2002: 158). Hence, the impact of China's joining the WTO will depend not only on the evolution of China's wages relative to the rest of the world, but also the evolution of productivity and regulations. There are many uncertainties in this regard. Still, there is no doubt that China will provide enormous competition for many developing countries.

As for cooperation versus conflict with workers in the industrialized countries, this too is somewhat unclear. The export orientation of China's development so far has certainly led to enormous potential conflicts with workers in the North. If the next phase of Chinese development

involves a substantial further export push to generate more employment, the conflict level will increase, possibly to the boiling point.

But if the next phase of China's development includes more domestically-oriented investment, it is possible that some of the conflict could be reduced. Although Northern FDI into China might be very large, it will probably be for the most part be aimed at the Chinese market. While U.S. workers are unlikely to benefit from this foreign investment, the level of trade competition in the U.S. market could level off.

The best outcome for both China and workers in the rest of the world, however, would be for the Chinese government to abandon its obsession with FDI and to re-orient its economic policy to economic development at home, focused first and foremost on domestic resources: expansionary macroeconomic policy, control of the financial sector, upgrading of domestic investment and production, environmental protection and the enhancement of labor's role in the economy. And unifying more democratic control over bargaining with MNC's and reducing corruption will do much to harness the enormous potential bargaining power of the Chinese people vis a vis international capital.

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Appendix A: Data Appendix

Unless otherwise indicated, the data discussed below are a compendium of two key sources: a provincial-level data set generously given by Robert Feenstra that covered the years 1980-95, originally culled from the statistical yearbooks of individual provinces and regions in China, supplemented by data taken from the *China Statistical Yearbook,* published annually by the PRC's National Bureau of Statistics. Because the latter is generally considered a more reliable source, where possible we have relied on these statistics.

Current vs. Constant Dollars. Unless otherwise discussed, all units are in nominal yuan. This choice was taken as a result of our inability to get reliable deflators for the full set of variables, especially trade. It should be noted, though, that when we tried the regressions using the consumer price index on wages and the GDP deflator on everything else, the results were consistent with the nominal numbers.

Wages are figured as the average annual wage for staff and workers, which includes those who work for wages and salaries with the exception of: teachers in schools run locally and foreigners and persons coming from Hong Kong Macao, and Taiwan and working in state-owned economic firms. Wages are calculated based on the total remuneration paid to staff and workers, regardless of source or category.

Employment is the total number of jobs held in a province during a particular year. It incorporates all individuals working for remuneration and earning business income, including: all staff and workers, re-employed retirees, self-employed workers, and employed rural workers.

Labor Force is figured as the total population fifteen and over by province. This is distinct from the concept of "economically active population" in that the latter includes only those already in the paid labor force or looking for remunerative work. We chose the wider definition to take account of those too discouraged to look for work (a potentially sizeable number in light of China's employment problems), as well as to incorporate the potential labor of individuals that move in and out of the workforce on a regular basis (in particular married women).

Investment. This category, termed "total investment in fixed assets" in Chinese statistical records, refers to the total volume of activities in construction and the purchase of fixed assets in monetary terms, regardless of the source of funds (including state enterprises and FDI, but not government spending). It is classified into four parts: capital construction, innovation, real estate, and other.

Foreign Direct Investment includes all investments inside China by foreign enterprises and economic organizations or individuals (including those from Hong Kong, Macao, and Taiwan). It includes re-invested earnings as well as funds that enterprises borrow from abroad. Our measure of FDI includes only actual (as opposed to contracted) investments. FDI is recorded in U.S. dollars; we transformed these into yuan using the relevant exchange rate published in the IMF's *Yearbook of International Financial Statistics*.

Trade includes all goods imported and exported outside the boundary of China to and from the relevant province. Imports are calculated at CIF, while exports are calculated at FOB. This data was taken from the *Almanac of Foreign Economic Relations and Trade* (various years),

and we transformed these figures from US$ into yuan using the relevant exchange rate published in the IMF's *Yearbook of International Financial Statistics*.

Government Revenue includes the following: tax revenue, special revenues (including special fees such as for education); other revenues, including revenue from repayment of loans, donations and grants; and planned subsidies for the losses of state-owned enterprises (a negative revenue).

Industrial Output is the total volume of industrial products sold or available for sale in a given year. State industrial output is a subset of this category, and reflects all industrial output produced by state enterprises.