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Trading with Asia's Giants

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Contents

List of Tables

List of Figures

Foreword

This paper was presented at the Conference on "India and China's Role in International Trade and Finance and Global Economic Governance" organised by ICRIER, Konrad-Adenauer-Stiftung (KAS) and the International Monetary Fund (IMF) held at New Delhi, India from December 6-7, 2007 and is being published shortly in a book titled "Emerging Giants: China and India in the World Economy" edited by Barry Eichengreen, Poonam Gupta and Rajiv Kumar.

The paper examines the patterns of U.S. trade relationships with China and India, and the factors that are influencing their evolution. It also analyzes the pattern of trade in services along with the more traditional focus on goods trade.

(Rajiv Kumar)
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August 1, 2008

Abstract

The United States' large and sustained trade deficit with Asia raises concerns in the United States about its competitiveness in the region. The purpose of this paper is to examine the patterns of U.S. trade relationships with China and India, and the factors that are influencing their evolution. In contrast to the current public policy debate, the discussion largely addresses how these two economies compare as markets for U.S. exporters. This paper begins by noting that U.S. exports to both countries do appear low relative to the performance of Japan and the EU-15. We examine potential explanations for the weak exports from three different perspectives. First, we analyze the composition of U.S. exports to these economies, and consider how this mix of products compares to those which it appears to be competitive in exporting to the rest of the world. Second, we examine the role of multinational corporations in facilitating the trade flows between the U.S and these two economies. Finally, we employ the use of "gravity equations" to examine the bilateral trade patterns while controlling for a variety of countryspecific characteristics, such as distance. In this context, we are also able to analyze the pattern of trade in services as well as the more traditional focus on goods trade.

Keywords: *China, India, United States, trade, and exports*
JEL Classifications: *F14, F23*

Trading with Asia's Giants

Barry Bosworth, Susan M. Collins, and Aaron Flaaen*

1. Introduction

Strong economic gains in China and India have captured an extraordinary amount of global attention, and the potential spread of economic prosperity to the world's two largest countries is a truly momentous development. At the same time, however, the United States' large and sustained trade deficit with Asia raises concerns in the United States about its competitiveness in the region. In recent years most of the focus has been on the bilateral trade balance with China; however, a different but equally contentious set of issues – centering on business services – is emerging with respect to U.S. trade with India. The purpose of this paper is to examine the patterns of the U.S. trade relationships with China and India, and the factors that are influencing their evolution. In particular, the public policy discussion has focused on imports from the region, while largely ignoring the role of U.S. exports. Much of our discussion compares these two economies as markets for U.S. exporters.

We begin with a brief review of the trade flow patterns that motivate this study. The large bilateral imbalance in U.S.-China trade is well known. While the overall magnitude of U.S. goods trade with India is much smaller, that bilateral trade deficit is also substantial in percentage terms. Our review highlights two important aspects of these trade relationships. First, despite all the focus on fears of job loss associated with U.S. imports from China, those imports do not stand out as particularly large when compared with European and Japanese imports from China. Instead, what stands out is the comparatively low level of U.S. exports to both China and India. Second, U.S. trade data shows services trade to be even larger with China than it is with India. With both countries, the bilateral services trade balance seems to be in balance or in slight surplus. These findings are surprising in light of all of the expressed fears about outsourcing of services jobs to India. Throughout the analysis, we explore U.S. trade with both India and China by contrasting it with their trade with the other two major industrialized economies of Japan and the EU-15.[1]

The main body of the paper evaluates the trade relationship from three perspectives. First we look at the composition of U.S. exports to the two economies. Do the products the U.S exports to China and India differ from the products for which it appears to have a comparative advantage in world markets more generally? Such a finding could be interpreted as suggesting the existence of various import barriers. How does the composition of U.S. exports compare with that of Japan and the EU-15?

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[1] The EU-15 refers to the fifteen members of the European Union prior to its May 2004 expansion to 25 countries. For comparative purposes, the EU-15 group corresponds more closely in income levels to the United States and Japan. The expanded EU includes a number of Eastern European states with significantly lower income levels and limited links to the global economy. The 15 are: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, and United Kingdom.

Second, we look at the role of multinational corporations because of the often-cited link between foreign direct investment and subsequent trade flows. Multinational firms are believed to focus on the creation of production and distribution networks that facilitate trade. Are American business firms as actively involved in India and China as implied by their operations in other economies? Do they serve as sales agents for their own imports into these countries?

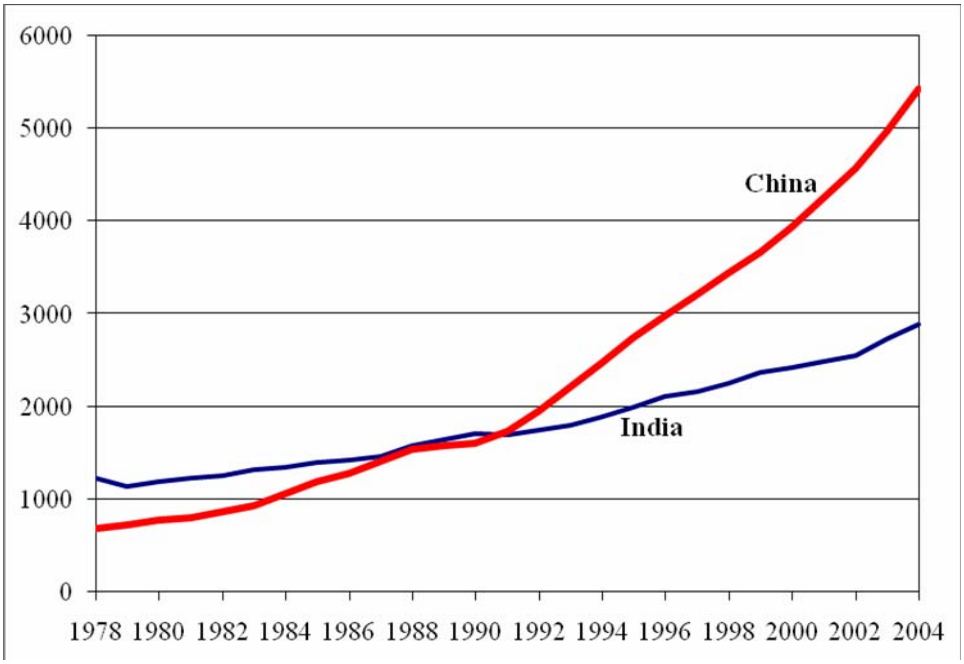
Finally, we undertake a more structured analysis by estimating a set of simple "gravity equations." This enables us to examine trade with India and China in the context of bilateral trade patterns more generally and to control for a variety of country characteristics including the distance between trading partners. Perhaps the problem is simply that India and China are far away? If so, this would shift the puzzle from why U.S. exports are so small, to why imports into the United States are so large. In this context, we examine patterns of services trade as well as the more traditional focus on goods trade.

2. Context

While it is often reasonable to consider the roles of China and India together in evaluating the growth of trade with Asia, it is also important to recognize their differences. Economically, China is a much larger country and has far greater interactions with the global economy. The acceleration of economic growth began much earlier in China, and over the past quarter century, average incomes have risen well above those of India. This gap has continued to widen in recent years, as GDP and trade have advanced more rapidly in China than in India. Figure 1 shows the growth of income per capita in the two countries.[2] It makes clear the extent to which China has leaped ahead, with average income now twice that of India. A summary of the sector composition of growth is provided in figure 2. China has achieved a faster growth of labor productivity in each of the three major sectors of agriculture, industry and services, but industry stands out as the largest source of difference. India matches China's growth only in the services-producing sector. At the same time, the two countries have experienced roughly equivalent gains from the reallocation of labor from low (agriculture) to high productivity sectors (industry and services). By international standards, both economies have been growing at extraordinary rates, but China's growth is broader and has been sustained for a much longer period.

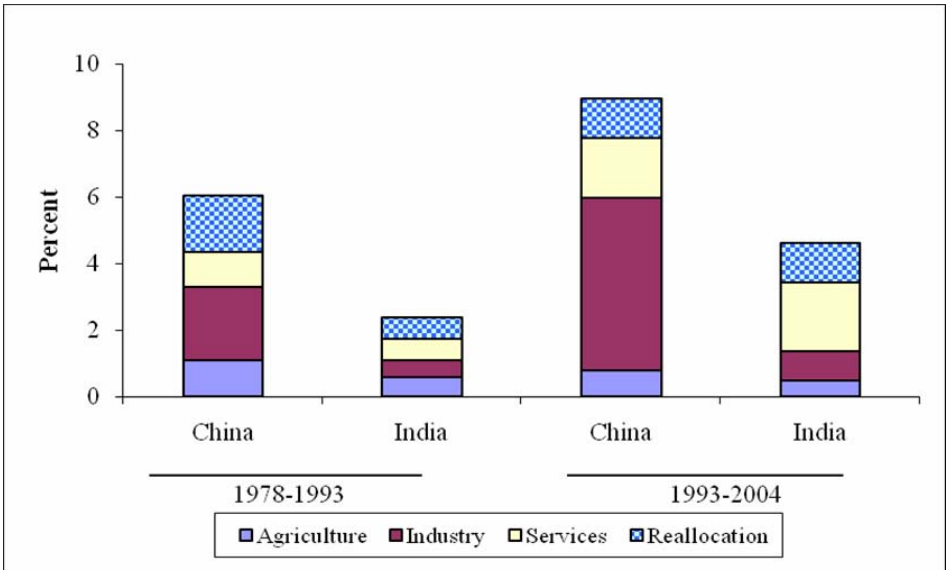
[2] The comparison is based on the new 2005 estimates of PPP. The new estimates reduced the level of GDP per capita by about 40 percent relative to the earlier estimates that were used by the World Bank. While the relative income levels of the two countries were not significantly altered, the absolute levels of income in 1978, seem even more implausibly low.

Figure 1: GDP per Capita, China and India
(Constant 2000 International (PPP) Dollars)



Source: World Bank. 2006. ***World Development Indicators****. This purchasing power parity measure of GDP standardizes for differences in the prices of common products across countries and over time.*

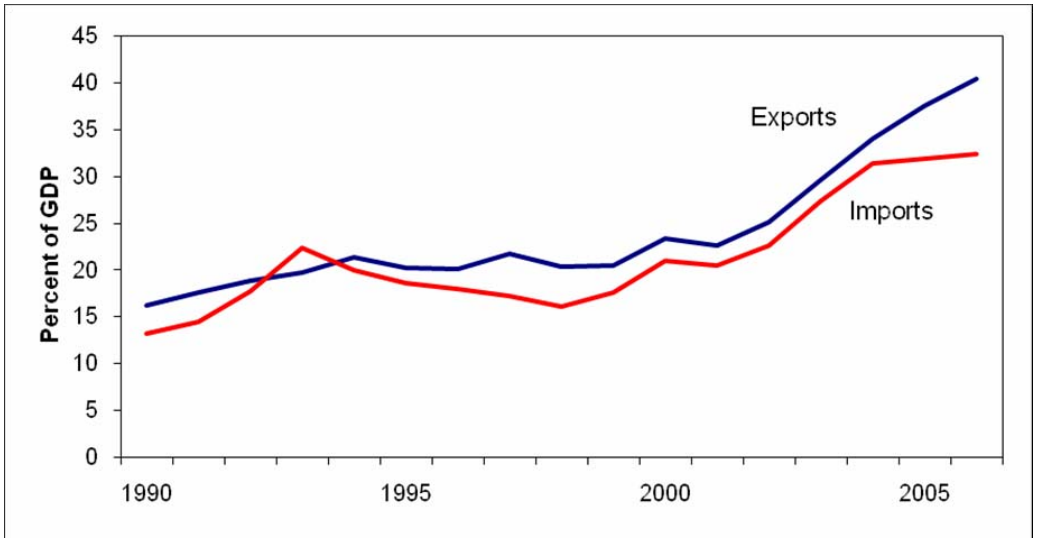
Figure 2: Growth in Output per Worker: Sector and Reallocation Components 1978-2004



Source: Bosworth and Collins (2006).

Figure 3 provides a simple overview of the historical trade performance of China and India. China's role in the global trading system has been complicated in recent years by a sharp shift in its global trade balance. As shown the top panel, China's external trade was a stable share of GDP throughout the 1990s, as exports and imports averaged about 19 and 18 percent of GDP respectively.[3] After admission to the WTO, both exports and imports grew rapidly, reaching 31 percent on the export side and 29 percent for imports in 2004. In addition, mainland China typically generated small trade surpluses averaging about two percent of GDP over the period of 1990-2004, and exceeding 3 percent only briefly in 1997-1998.

Figure 3a: Mainland China's Exports and Imports to World, 1990-2006 (Goods and Services Trade, percent of GDP)



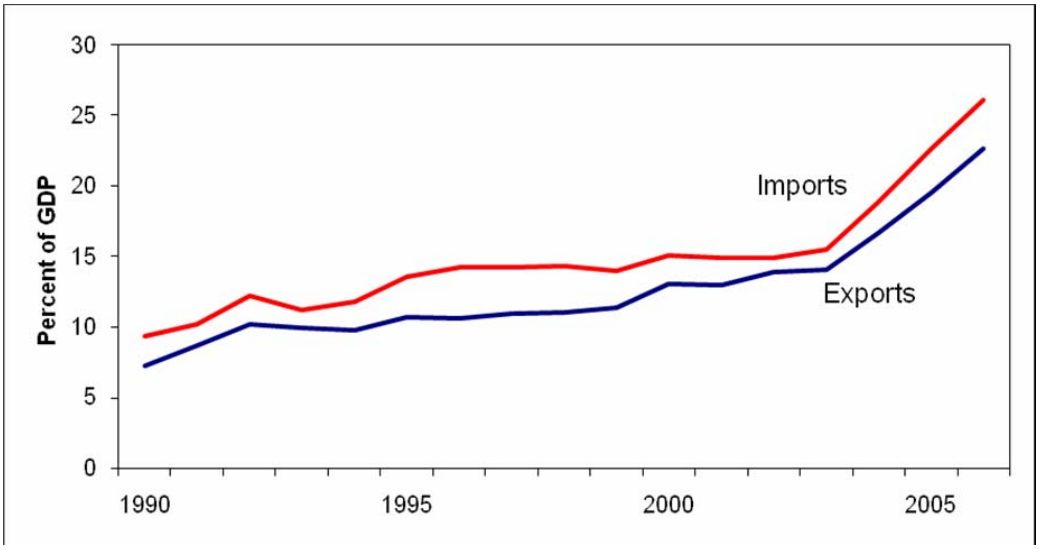
Source: IMF Balance of Payments Statistics

All of this changed after 2004 when the trade surplus began to grow at a rapid pace. The balance for mainland China increased from $32 billion in 2004 to $102 billion and $178 billion in 2005 and 2006 respectively. The surplus for 2007 is projected to approach $300 billion. The emergence of a large trade surplus has been a considerable surprise since many countries believed that they had extracted major concessions from China as part of the negotiations leading up to its admission to the WTO at the end of 2001. Some commentators have traced the change to the termination of the Multifiber Arrangement at the beginning of 2005.[4] However, as evident in the figure, the break in the prior pattern of trade, measured as a share of GDP, appears to be on the import side: while exports continued their rapid growth, the import share has flattened out.

[3] The stable trade share is itself a notable contrast to frequent assertions that China's rapid growth has been driven by export-promotion policies.

[4] The opening of the market did lead to an extraordinary surge of apparel imports from China, but if was followed by the re-imposition of quantitative limits in mid-2005.

Figure 3b: India's Exports and Imports to World, 1990-2006
(Goods and Services Trade, percent of GDP)



Source: IMF Balance of Payment Statistics

India, in contrast, has long had a much lower share of trade in GDP and the rapid growth in trade is of a more recent origin, beginning after 2003. In 2003-06, however, India's trade grew at a more rapid rate than that of China − in excess of 30 percent per year. Furthermore, India has also had a consistent trade deficit, financed by private remittances and capital inflows.

Some basic statistics covering U.S. trade with China and India in 2005 are shown in table 1, and contrasted with Japan and the EU-15.[5] The unusual size of the U.S. merchandise trade deficit with China is very evident. However, despite the emphasis often placed on imports from China, the middle panel indicates that goods imports from China are a smaller share of GDP for the United States than in Japan, (2.2 versus 2.4 percent). Instead, the bilateral relationship seems unusual in the small magnitude of U.S. exports to China. U.S. merchandise exports to China comprise only 0.5 percent of GDP compared to 2.6 for Japan. In fact, Japan has had a consistent trade surplus with China. Compared with the U.S., the EU-15 also exports a larger share of its GDP to China, and combined with its lower share for imports, has a significantly smaller trade imbalance.

The precise size of the bilateral trade imbalance between the United States and China – and to a lesser extent, China's global trade balance – has been a subject of some dispute. Issues involving differences in the measurement of bilateral trade flows have been extensively explored in a series of prior papers.[6] Most of the confusion is caused by the transshipment of goods through Hong Kong. Not only do exporters often not

[5] Our definition of China combines the trade data for the Mainland, Hong Kong, and Macao.

[6] The issues were clarified in a series of papers by Feenstra and others (1999), Fung and Lau (1996, 2003), Fung and others (2006), and Shindler and Beckett (2005). A recent paper by Wang and others (2007) uses a highly flexible algorithm to reconcile China's trade data with all of its major trading partners.

know the true destination of such products, there is also a significant change in value due to the additional margins added by the Hong Kong traders. Both the United States and China alter the source of imports that pass through Hong Kong if they judge that greater value was added prior to arrival in Hong Kong.

Table 1: Trade with China and India, Major Industrial Economies, 2005 (billions of U.S. dollars)

		United States		**Japan**		**EU-15**	
GDP		**12,417**		**4,534**		**12,765**	
		Goods	*Services*	*Goods*	*Services*	*Goods*	*Services*
Global Trade							
	Exports	904.3	367.8	594.9	110.3	1,459.2	514.0
	Imports	1,732.5	281.6	515.2	134.3	1,581.7	454.8
	Balance	-828.3	86.2	79.7	-24.0	-122.5	59.2
Bilateral Trade With:							
China	Exports	58.2	13.4	116.0	10.5	87.8	23.7
	Imports	269.1	12.1	110.0	14.2	205.0	17.7
	Balance	-211.0	1.4	6.0	-3.7	-117.3	6.0
India	Exports	8.0	5.2	3.5	0.8	25.6	6.5
	Imports	19.9	5.0	3.2	0.3	23.3	5.8
	Balance	-11.9	0.1	0.3	0.4	2.3	0.7
	Percent of GDP						
China	Exports	0.47	0.11	2.56	0.23	0.69	0.19
	Imports	2.17	0.10	2.43	0.31	1.61	0.14
	Balance	-1.70	0.01	0.13	-0.08	-0.92	0.05
India	Exports	0.06	0.04	0.08	0.02	0.20	0.05
	Imports	0.16	0.04	0.07	0.01	0.18	0.05
	Balance	-0.10	0.00	0.01	0.01	0.02	0.01

Global Trade					
		Goods	**Services**	**Total**	**GDP**
China	Exports	1,054.5	146.8	1,201.3	
	Imports	930.8	119.4	1,050.1	2,406.6
	Balance	123.8	27.4	151.2	
India	Exports	102.2	55.8	158.0	
	Imports	134.7	48.0	182.7	785.5
	Balance	-32.5	7.8	-24.7	

Source: IMF Directions of Trade Statistics for goods trade, and OECD for services trade.

However, both report Hong Kong as the destination for much of their own exports. Fung and others (2006) obtain an estimate of the U.S. bilateral merchandise trade deficit with China of $172 billion in 2005 compared with official estimates of $202

billion published by the United States and $114 billion published by China. We avoid some of the problems that they identify by focusing on trade with the combination of China, Hong Kong, and Macao.

India represents a sharp contrast to China in the small size of its goods trade.[7] Although India's GDP is a third that of China, its global trade is only about 12 percent as large while its trade with the United States is less than 10 percent as large. Even more striking, Japan's trade with India is less than 5 percent of its trade with China. Only in the case of the EU-15, does the relative size of the bilateral trade seem proportionate to the size of the two economies. For example, EU-15 exports to India are three times those of the United States. Similar to China, the United States has a large bilateral trade deficit with India, while both Japan and the EU-15 have small bilateral trade surpluses.

3. Services Trade

Surprisingly, China's global trade in services is substantially larger than India's, although the two countries' service trade ratios are roughly proportionate to their GDPs.[8] As evident from the data shown in table 1, India's services exports are about 7 percent of its output, compared with 6 percent for China. Of course, given China's size, this translates into a much greater dollar value. Thus, despite extensive media to the off-shoring of service jobs to India, the United States reports a larger volume of services trade with China than India, and a positive services trade balance with both countries. The EU-15 countries report services imports from both China and India that exceed those of the United States, but they too show a bilateral surplus. In contrast, Japan's reported services trade with India is quite trivial.

Table 2 shows the composition of services trade for both countries, which is indeed quite different. While computer and information related services account for nearly 40 percent of India's services exports, by far the largest category, these products are less than 2 percent of the total for China. Other business services are the largest category for China and the second largest for India. But this primarily reflects trade related services for China (fully one quarter of China's services exports) versus non-trade related services for India. It is important to note, however, that while this latter category accounts for 24 percent and 9 percent of exports from India and China respectively, it amounts to roughly the same dollar value of trade. In terms of services imports, the main differences are the much more important role for travel and travel-related services as well as royalties and license fees for China, and for transportation and other business services for India.

India's estimate of $56 billion in services exports includes $43 billion for other services, excluding transportation and tourism. We would expect most of this trade to be with the high-income economies of the EU-15, Japan, and the United States. However, as shown in the middle of table 1, these countries together report services imports from India totaling only $11 billion. It is difficult to discern the strong performance of India's services sector from these statistics. The U.S., EU-15 and

[7] A detailed comparison of the global trade performance of the two countries is available in Panagariya (2006).

[8] See Nikomborirak (2007) for a discussion of the service industries in the two countries.

Japan together report $44 billion in services imports from China – four times that from India. This is also well below the totals reported by China (table 2), but we might expect China's services trade to be somewhat more dispersed.

Table 2: 2005 Services Trade by Type, India and China (billions U.S. Dollars)

	Credits		Debits	
	China	*India*	*China*	*India*
Total	146.8	55.8	-119.4	-48.0
Transportation services	36.1	5.7	-39.1	-20.1
Travel services	47.6	7.5	-35.4	-6.0
Other services	63.1	42.6	-44.8	-21.8
Communications	1.5	2.0	-1.8	-0.7
Construction	2.9	1.0	-1.9	-0.7
Insurance	1.0	0.9	-7.9	-2.2
Financial	6.5	1.5	-1.6	-1.1
Computer and information	2.1	22.0	-2.1	-1.6
Royalties and licence fees	0.4	0.1	-6.6	-0.8
Other business services*	47.7	14.6	-21.9	-14.2
Trade related services	34.6	1.2	-12.6	-1.4
Other business services	13.1	13.5	-9.3	-12.8
Other Services	1.0	0.5	-1.0	-0.6

*Source: IMF Balance of Payments Statistics *The composition of trade in other business services is proportionally allocated based on data from the mainland only.*

There are, however, major concerns about the international comparability of statistics on services trade. The measurement of services trade is more difficult than that of goods because in many cases the services transactions cannot be tied to any physical movement across a national border. Instead, the transactions are defined in terms of the residence of the buyer and seller, but residence can be a vague and easily changed standard. An additional complication arises because the United States reports services trade in two categories -- affiliated and unaffiliated. Affiliate transactions refer to intra-firm trade between parent firms and their affiliates. The United States does not report the country pattern of affiliate trade for the detailed categories of computer and other business services because it believes that the multinational companies cannot accurately account for their detailed intra-firm trade by country.

In recent years, India has consistently reported a level of exports to the United States in the category of Business, Professional, and Technical (BPT) Services that is more than twenty times that recorded by the United States as an import— $8,700 million versus $402 million, for example, in 2003. The General Accountability Office sent a team to India and issued a report in 2005 that identified most of the discrepancies.[9] To begin with, the U.S estimates are too low: the Bureau of Economic Analysis reports

[9] They have authored two reports on the issue. See United States General Accountability Office (2004) and (2005).

country-specific data only for unaffiliated trade. Given the importance of affiliated trade in total BPT services, it would be reasonable to increase the U.S. estimate by a factor of 3 to 4. Also, the importation of computer software that is embedded in imported computers is classified as part of goods trade, rather than services. However, because India is not a major exporter of embedded software, the different treatment is probably not a major contributor to the discrepancy.

Issues with the Indian data account for most of the remaining discrepancy. The Indian balance of payments deviates from U.S. practice in two major respects. First, the earnings of Indian workers who reside in the United States are included in India's service exports, but excluded in the U. S. data if they intend to stay more than one year. That activity is believed to represent about 40 percent of India's total BPT exports. Second, India reports the internal sale of services to local affiliates of U.S. firms as part of its exports. That is estimated to be about 30 percent of the BPT total. Thus, the GAO concluded that, relative to U.S. standards, the level of service exports to the United States was overstated, by a factor of 2 to 3 in the Indian data.[10]

Measuring trade in services accurately is thought to be more challenging for the importing country because consumers tend to be considerably more diffuse than producers. Since there is no counterpart to customs reports on goods, the United States relies heavily on surveys of service-importing firms. In contrast to exporters, these are spread over a large number of industries and can be difficult to identify. From the Indian side, exporters are a more readily identified producer group. At the present time, however, India and the OECD countries appear to be reporting very different concepts of services trade.

4. Composition of Goods Exports

The weak performance of U.S. exports to China and India is a long-standing phenomenon. The United States has had a consistent trade deficit with both countries dating back to the mid-1980s. In this section, we compare the commodity composition of U.S. exports to both countries with the composition of U.S. exports to the world more generally. Perhaps the low level of U.S. exports to these countries reflects differences in the types of goods the U.S. exports to each relative to the types of goods it exports to the world as a whole. We also compare the composition of U.S. exports with those of the EU-15 and Japan as an indicator of the extent to which they are competitors in these markets.

Measures of the correlation of commodity composition of trade with China and India and the world as a whole are shown at the level of 237 3-digit SITC codes in the top of table 3. The simple rank correlation is reported on the left, and the correlations based on shares of total trade are shown on the right. First, it is notable that the composition of U.S. exports to China seems very similar to the composition of its global exports, a rank correlation coefficient of 0.84. We obtain a matching result for the EU-15 countries, and the correlation is even more evident for Japan (a rank correlation coefficient of 0.92). We interpret this result as implying that the Chinese market is about as open to industrial country exports as world markets are more

[10] Some of the issues for computer services are discussed from the Indian perspective in Reserve Bank of India (2005).

generally. The rank correlations are lower for India, but large differences do not emerge until the correlations are computed on the basis of shares of total exports. The large drop in the correlation for trade between the EU-15 and India compared with the EU-15's trade with the world results because 30 percent of their exports to India are accounted for by shipments of precious stones for polishing and finishing. The deletion of this single commodity category would raise the correlation from 0.26 to 0.60. This commodity group accounts for 5 percent of U.S. trade with India and zero for Japan.

Table 3: Correlations of Bilateral Commodity Trade, 2005

	Rank Correlation of Commodity Trade		**Correlation of Trade Shares**	
	China	*India*	*China*	*India*
World/Country				
United States	0.84	0.77	0.78	0.69
Japan	0.92	0.88	0.67	0.51
EU-15	0.84	0.78	0.72	0.26
Competitors				
U.S./Japan	0.74	0.71	0.61	0.27
U.S./EU-15	0.78	0.82	0.72	0.52
Japan/EU-15	0.78	0.81	0.72	0.15

Source: United Nations Comtrade database. Correlations based on three-digit SITC commodity classification, with a total of 237 codes. Commodity share is the value for each code divided by the relevant bilateral total.

Second, the table shows that the three high-income economies export very similar products to China, and therefore appear to be strong competitors in that market. The rank correlation between U.S. and EU-15 exports to China is 0.78, declining only modestly to 0.72 for the correlation of actual commodity shares. However, the correlations fall dramatically for shares of exports to India. Again, this is largely due to the dominant role of precious stones in EU exports. In other respects, export patterns accord with areas of specialization: the U.S. is strong in aircraft, computing and telecommunications equipment; Japan has a prominent role in motor vehicles and various machinery categories; and EU-15 exports other than gem stones are concentrated in aircraft and telecommunications. However, outside of these dominant areas, there is very little overlap in what these economies export to India.

Overall, there is little that we find unusual about the commodity composition of U.S. trade with India and China. It is similar to U.S. trade with the world more generally. It is also evident that the industrial economies are strongly competitive with one another in both markets; but the competition is more extensive in China.

We conclude that the low level of U.S. exports to both China and India cannot be attributed to restrictions that distort the commodity pattern of trade.

Finally, statistics on the commodity composition of trade can also be used to contrast the export performance of China and India. Panagariya (2006) argues that the

composition of China's exports has rapidly shifted toward an emphasis on labor-intensive manufactures, while the composition of India's exports has remained more haphazard. He also points out that, at the 2-digit level of commodity trade flows, there is very little overlap between the exports of China and India. We obtain much the same result using the more detailed 3-digit classification. The rank correlation between their global exports is only 0.59 in 2005, and there is no correlation between the commodity share distributions. The correlations of the two countries' global imports are also quite low: the rank correlation is 0.77, but the correlation of 3-digit commodity shares falls to 0.42. Currently China and India are not close competitors in either export or import markets, and given the large differences in the size of their trade sectors, they occupy quite different positions in the trading system.

5. The Role of Multinational Corporations

The foreign direct investment (FDI) of multinational companies (MNCs) in emerging markets is believed to be important because it provides a beachhead from which to promote bilateral trade. From this perspective, it is notable that U.S. investments in both China and India are very small. Although the U.S. imports a large volume of goods from China, U.S. firms invested over the period of 2000-06 an average of only $5 billion per year, split equally between Hong Kong and Mainland China, or only about 3.5 percent of U.S. global FDI over the period. Investments in India were even smaller, averaging $0.75 billion, or 0.5 percent of the global total. While U.S. retailers, such as Wal-Mart and Mattel, have large imports from China, they do not deal with American multinationals in China. Instead, a large portion of their purchases are from foreign invested enterprises (FIEs) that originate from other countries in Asia, or from Chinese contract manufacturers. Similarly, the information and communication technology (ICT) trade with India appears to not pass through U.S. affiliates.

A summary of the activities of U.S. affiliates in China and India is shown in table 4. The data are drawn from the benchmark surveys of U.S. multinational corporations that are conducted at 5-year intervals. The top panel reports the results for China, and, as with the trade data, it combines the information for the mainland and Hong Kong. First, although affiliate sales started from a very low level, they have grown at a rapid pace.[11]

Total affiliate sales expanded at a 14 percent annual rate between 1989 and 2004, and the growth has been concentrated among affiliates on the mainland. Second, affiliate sales are focused on the domestic market, which accounts for 60 percent of total sales in 2004. Approximately 30 percent of sales are directed to other countries – largely in Asia – and only 12 percent are sales back to the United States.

[11] Exports have also grown rapidly in recent years, 15 percent annually in the 2000-06 period.

Table 4: U.S. Affiliate Activities in China and India, 1989-2004 (in millions of US Dollars)

	1989	1994	1999	2004
China:				
U.S. Multinational Affiliate Sales				
Total Sales	16,664	32,954	67,635	123,531
Sales to the U.S.	3,554	4,638	10,405	14,297
Local Sales	7,438	19,289	42,565	73,602
Sales to other foreign countries	5,672	9,027	14,665	35,632
U.S. Exports of Goods to Affiliates	2,261	5,719	7,533	5,402
U.S. Imports of Goods from Affiliates	3,071	4,021	8,500	9,719
Total US Trade with China*				
Exports	12,111	20,732	25,670	50,530
Imports	23,139	51,504	97,499	220,308
India:				
U.S. Multinational Affiliate Sales				
Total Sales	323	983	4,554	13,100
Sales to the U.S.	(D)	28	138	1,582
Local Sales	(D)	934	4,327	9,914
Sales to other foreign countries	13	21	89	1,604
U.S. Exports of Goods to Affiliates	23	33	331	508
U.S. Imports of Goods from Affiliates	(D)	28	77	373
Total US Trade with India*				
Exports	2,463	2,296	3,666	6,095
Imports	3,551	5,663	9,598	16,437

Sources: BEA Surveys of U.S. Direct Investment Abroad, and IMF Directions of Trade Database.
Notes: Data for China includes Hong Kong. Sales are those of majority-owned companies. "(D)" indicates that the data has been suppressed to avoid disclosure of data of individual companies.

Furthermore, as shown at the bottom of the table, only 10 percent of U.S. exports to China pass through the affiliates, and only 5 percent of imports originate with affiliates. Clearly U.S. multinationals operate in China with minimal trading links to their U.S. operations. They are not directly utilizing China's low labor costs for exports back to the U.S. market.

Comparable data for India is reported in the bottom panel of table 4. The contrast in scale of the operations with that reported for China is similar to the prior analysis of trade flows. U.S. affiliate sales in India in 2004 were only 10 percent of the total for

China. The emphasis on the local market is even greater – 75 percent of total sales – primarily because of the trivial amount of sales to third countries. Despite all of the discussion of the off-shoring of IT services, little of it appears to involve affiliates of U.S. multinationals.

Table 5: Japanese Affiliate Activity in China (in millions of U.S. dollars)

	2002	2003
Japan Multinational Affiliate Sales		
Total Sales	27,515	43,524
Sales to Japan	9,506	13,062
Local Sales	9,665	18,497
Sales to other foreign countries	8,349	11,772
Japan Exports of Goods to Affiliates	6,270	8,305
Japan Imports of Goods from Affiliates	3,685	5,077
Total Japan Trade with China		
Exports	65,390	87,398
Imports	63,211	76,907

Source: Japanese Ministry of Economy, Trade, and Industry, and IMF Directions of Trade Database.
Note: Data include mainland China and Hong Kong

For comparison purposes, we have also compiled some data on Japanese affiliate operations in China that are presented in table 5. Japanese affiliate sales are considerably smaller than those of the United States, but they are expanding even more rapidly. They are less focused on the local market (about 45 percent of sales), and export a larger percent of sales back to Japan. However, like U.S. firms, the affiliates are not used as vehicles to promote exports from Japan – sales to affiliates are less than 10 percent of exports to China. In its published material, the Japanese Ministry of Economy, Trade and Industry does not identify India, presumably because the affiliate activities are very small, commensurate with the scale of its trade.

An alternative set of data from the OECD on the outstanding stock of FDI in 2005 provides additional information on the relative involvement of the three large industrial economies in China and India (OECD, 2007). The United States is the largest investor of the three with investments of $55 billion in China and $8.5 billion in India; but as noted above, they represent very small shares of its global investments. The EU-15 is of similar importance with $51 billion in China and $6.5 billion in India. Japan has a substantial investment base in China, $31 billion; but is very small in India, $2 billion.

Branstetter and Foley (2007) conclude that affiliate activity in China is very much in line with U.S. operations in other countries and that it is motivated by both the size of the domestic market and favorable tax treatment. We find that same emphasis on the domestic market in India with only a weak linkage to trade.

It seems clear that U.S firms operating in China and India do not serve as vehicles for exports, although a loose linkage seems to be a common feature of U.S. affiliates throughout the world. U.S global exports to affiliates of multinationals represented only 5.6 percent of affiliate sales in 2004. The 4.5 percent reported for affiliates in China and the 4 percent in India are not appreciably different. In comparison, Japanese exports to their affiliates in 2002-03 were 6 percent of sales at the global level and 20 percent in China.

6. The Role of Distance

The simplest explanation for a low level of exports between the United States and the Asian economies is that they are far away. However, distance does not provide an obvious explanation for the asymmetry of the U.S. trade relationship that is so evident for trade with China and India, small exports but large imports. In this section, we use econometrics to explore its role more formally.

The use of gravity equations to explain the pattern of bilateral trade flows dates back to the work of Jan Tinbergen in the early 1960s. In their simplest form, the volume of trade between any two countries is modeled as proportionate to their economic size and various measures of "trade resistance." Measures of trade resistance have included distance between the two trade partners, the presence of a common language or membership in preferential trade associations.[12] We use the gravity model framework to examine the extent to which such a model can account for the differential importance of China trade for the United States, Japan and the EU-15.

The empirical analysis is based on a very simple formulation in which economic size is measured by the combination of a country's population and its income per capita. In addition, the trade (distinguishing between imports and exports) between a country and its trading partners is estimated separately for the United States, Japan, and the EU-15. The base regression is:

$$(1)\ \ln T_{ij} = \alpha + \beta_1 \ln POP_j + \beta_2 \ln Y_j + \beta_3 \ln D_j + \beta_4 \ln X_{i,j}\ .$$

Where T_{ij} = trade (imports or exports) from country i to country j,
POP_j = population of country j,
Y_j = GDP per capita of country j,
D_{ij} = distance between country i and country j, and
X_{ij} = other measures of "trade resistance".

Normally, the relationship would also include the population and income per capita of both country pairs, but in our analysis the relationship is estimated separately for each of the three base economies (the United States, Japan, and the EU-15).

[12] A useful review is provided by Deardorff (1998). Helpful recent discussions of linkages between the theoretical formulations and the empirical analyses are those of Anderson and van Wincoop (2004), Feenstra (2002), and Helpman, Melitz, and Rubenstein (2007). For a recent application and discussion the estimation issues see Coe and others (2007).

Goods Trade

The annual trade data are taken from the Direction of Trade Statistics of the International Monetary Fund and cover the period 1980-2005. GDP and population are from the World Development Indicators of the World Bank. The trade data are scaled by the nominal dollar GDP of each of the base economies and the GDP per capita of the trading partners is measured in 2000 U.S. dollars. The measures of distance and the other bilateral pairing variables used to proxy "trade resistance" – such as language, contiguity and colonial link – were obtained from the French Institute for Research on the International Economy (CEPII).[13]

The basic results are reported in table 6 and cover 162 countries over 26 years. All of the equations are estimated with a fixed-effects formulation to allow for shifts in the constant term over each of the 26 years.[14] The number of observations varies slightly across the individual regressions because the few countries in each sample for which no trade is recorded have been dropped. Also, while the individual countries of the EU-15 are included in the regressions for the United States and Japan, regressions for the EU-15 exclude intra-group trade. The regression results are very consistent with similar estimates in the literature: the elasticity of trade with respect to the two measures of economic size is very close to unity and there is a strong role for distance.

There are also significant econometric issues that we have not addressed (See Helpman and others (2007) for a discussion). In our data set, which is limited to the trade of three large economies, we do not have a significant problem with zero bilateral trade entries, which have to be excluded in a logarithmic estimation. In addition, the distinction between intensive and extensive trade should be important for us only on the import side, and we do not yet have an effective estimation method.

[13] The distance measure is the weighted distance measure of CEPII, which reflects the bilateral distance between the major cities of each country. The definition of a common language that we use states that a language is shared if it is spoken by at least 9 percent of the population in both countries. A country shares a language with the EU15 if this is true for any of the 15 countries.

[14] The use of fixed-effects estimation had no significant influence on the estimated coefficients, but it does reduce the evident autocorrelation of the error term. These year dummies adjust for a variety of factors that may be changing over time, such as overall openness and degree of exchange rate overvaluation.

Table 6: Gravity Equations for Global Trade: United States, Japan, and EU-15

	United States				Japan				European Union (15)			
	Exports/ GDP (1)	*Imports/ GDP (1)*	*Exports/ GDP (2)*	*Imports/ GDP (2)*	*Exports/ GDP (1)*	*Imports/ GDP (1)*	*Exports/ GDP (2)*	*Imports/ GDP (2)*	*Exports/ GDP (1)*	*Imports/ GDP (1)*	*Exports/ GDP (2)*	*Imports/ GDP (2)*
Weighted Distance	-1.02	-0.60	-1.16	-0.71	-1.11	-1.55	-0.61	-0.65	-1.06	-0.74	-1.15	-0.79
	(-29.2)	(-11.3)	(-31.9)	(-13.0)	(-26.0)	(-24.0)	(-10.7)	(-7.7)	(-48.7)	(-26.3)	(-43.9)	(-23.3)
Population	0.90	1.05	0.90	1.05	0.82	0.93	0.86	1.00	0.79	0.90	0.79	0.90
	(106.0)	(81.8)	(108.2)	(82.5)	(88.6)	(64.0)	(90.8)	(68.0)	(124.4)	(110.6)	(125.1)	(110.7)
GDP per Capita	1.06	1.15	1.05	1.14	0.98	1.13	1.01	1.18	0.87	0.90	0.87	0.90
	(98.2)	(70.6)	(98.7)	(70.2)	(83.0)	(63.2)	(85.9)	(67.2)	(97.6)	(78.3)	(97.2)	(77.8)
Common Language	0.70	0.71	0.67	0.69					0.26	0.26	0.30	0.29
	(20.1)	(13.6)	(19.6)	(13.2)					(8.0)	(6.4)	(9.2)	(6.9)
Colony									0.32	0.24	0.38	0.28
									(7.0)	(4.2)	(8.2)	(4.7)
East Asia Region			0.56	0.51			0.89	1.61			0.25	0.15
			(11.8)	(7.0)			(13.1)	(15.8)			(6.1)	(2.8)
Constant	-37.17	-44.12	-35.97	-43.06	-33.90	-33.46	-39.39	-43.36	-32.98	-37.83	-32.28	-37.41
	(-100.1)	(-78.9)	(-95.1)	(-74.7)	(-72.8)	(-47.1)	(-63.7)	(-46.6)	(-139.6)	(-124.5)	(-123.4)	(-110.8)
adj_R2	0.858	0.760	0.863	0.763	0.812	0.714	0.820	0.733	0.886	0.841	0.887	0.841
Observations	3577	3532	3577	3532	3626	3534	3626	3534	3367	3367	3367	3367

Source: Estimated by authors as described in text. All of the regressions are estimated within a fixed effects model allowing for shifts over years. All variables are measured as logarithms except for the categorical variables of common language, colony, and the East Asia region. T-statistics are in parentheses.

Of greatest relevance in the current context, the distance coefficients are very large and significant in all of the regressions. Unexpectedly, there is evidence of an asymmetric effect on U.S. trade: the distance coefficient for U.S. exports is markedly greater than that for imports. A similar, though smaller, asymmetry also exists for the EU-15; but the asymmetry is reversed for Japan where the coefficient on distance is largest in the import equation. The coefficient on distance is interpreted by some researchers as a measure of global integration. From that perspective, importers to the United States appear to have been considerably more successful than U.S. exporters in overcoming trade barriers associated with distance from the U.S. market. Furthermore, the reversal of the relationship for Japan implies that Japan has been more successful in overcoming barriers to its exports than others have been in overcoming barriers to their exports to Japan. It is also notable that the effects of distance on exports from and especially imports to Japan are significantly larger in magnitude than for either the U.S. or the EU-15.

Thus, the results from the gravity equations do have a major effect on our conclusions about the magnitude of U.S. trade with Asia. This is particularly true for trade with China, which is far away from the United States (11,000 kilometers), but close to Japan (2,000 kilometers). An elasticity of distance near unity implies that the U.S. export share in GDP would be very similar to that for Japan if the two countries' distance from China were equalized. Thus, distance can fully account for the differences in the importance of exports to China. However, if the distance were equalized, the hypothetical level of U.S. imports from China would also increase by a proportionate amount.[15] India is even further away from the United States (13,500 kilometers).[16]

In testing the robustness of the results, we examined a wide range of alternative formulations. For example, we included categorical variables for each of the three major economies in the trade relationships of the others. Canada and Mexico were also included directly in the U.S. equations. While those variables were all significant, they had no substantial effect on the size of the other coefficients in the regressions, such as distance. Furthermore, we found a more general pattern in which all of the East Asian economies had positive residuals, implying a larger volume of trade than indicated by the simple distance variable.

The results with the categorical variable for East Asia are shown in a second set of regressions in table 6. The East Asia coefficient is large and positive in the U.S. regressions, raising the predictions for both exports and imports; but surprisingly, there is no significant change in the coefficients for the other variables including distance. Also, the magnitude of the regional effect seems to be similar for both imports and exports. There is some decline, however, in the magnitude of the asymmetry of the coefficient on distance between the export and import equations. A similar result is evident for the EU-15, although the coefficient on the Asia variable is only half as large. The regression results for Japan are quite different, however, because the coefficient on the East Asia region is extremely large, twice the magnitude shown for the United States; and the coefficients on distance decline

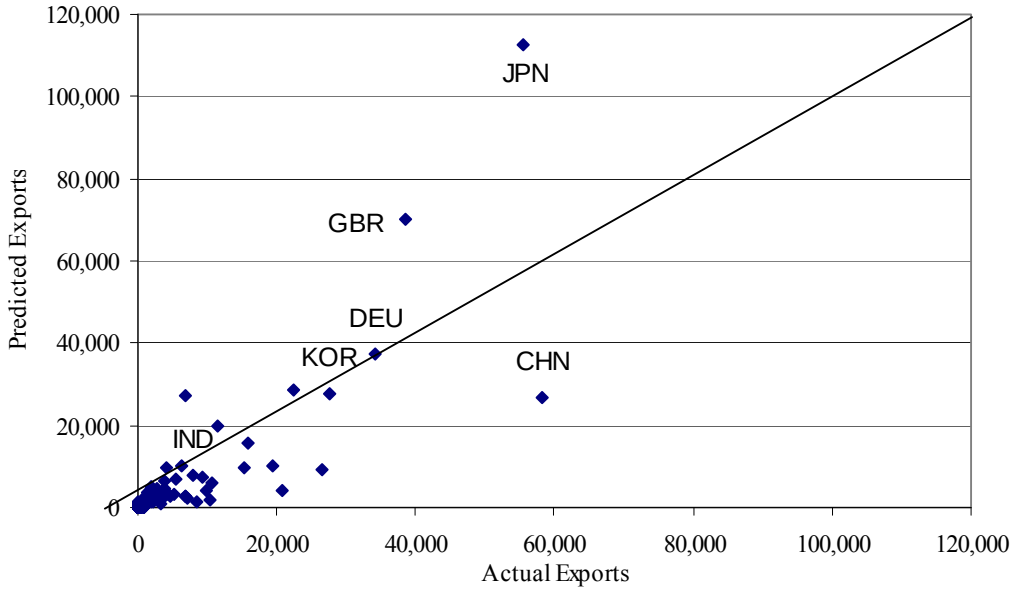
[15] The distance elasticity for imports from China is less than for exports, but the level of imports is much larger.

[16] The distance from Japan to India is 6,000 kilometers, and for the EU-15 the average distances are 6,800 kilometers to India and 8,300 to China.

dramatically. It is evident that an important regional trading pattern has emerged within East Asia that is not well-represented in a simple focus on distance. This formulation did not work, however, when we tried to expand the definition of the categorical variable to include South Asia.

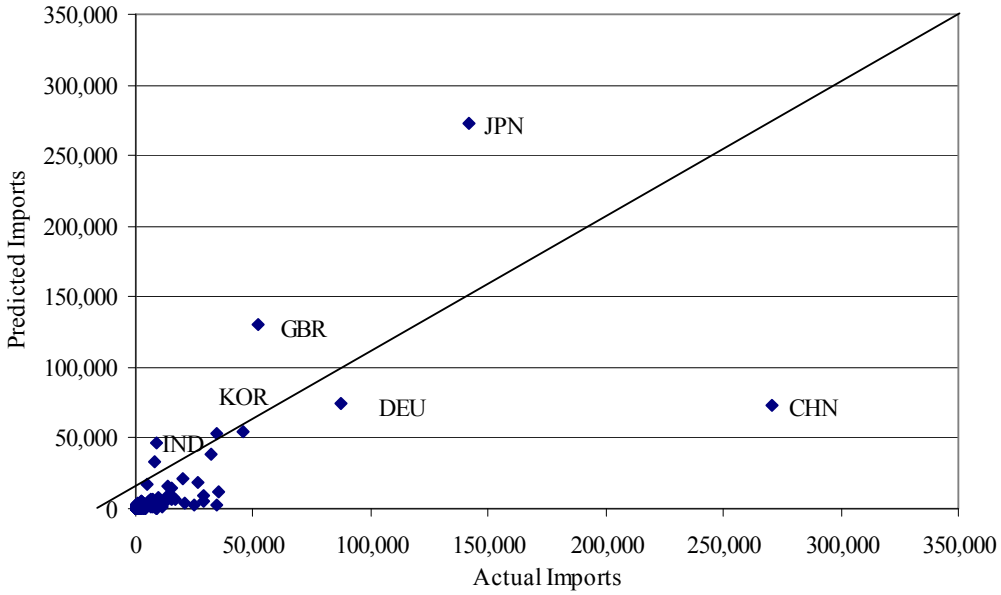
Several commentators have raised questions about the consistency of the results over time and the possibility that the effect of distance in particular may have declined. As a partial test of the hypothesis, we refit the regression estimates to 5-year sub-periods. While we have not reported all of the results, the regression estimates were remarkably stable across the subperiods. For the United States, the coefficients on population and GDP per capita had standard deviations of 5 percent or less across the five subperiods. The coefficients on distance did vary over a wider range of 10 percent, but the coefficient in the export relationship became more negative over time, contrary to our expectations, and the magnitude of the asymmetry between exports and imports increased.[17] The magnitude of coefficient changes for the EU-15 and Japan were very similar to the results for the United States, except there was no uniform pattern of change over time.

Figure 4a: US Exports to Selected Countries, 2005 with East Asia adjustment (in million USD)



[17] To explore whether changes in the distance coefficient over time were statistically significant, we ran full sample regressions that interacted distance with dummies for each five-year time period. The changes were highly significant (1% level) for exports, but not significant for imports.

Figure 4b: US Imports from Selected Countries, 2005 with East Asia adjustment (in million USD)



Source: Computed from equations of table 5. Values for Canada and Mexico are excluded from the Charts.

The actual and predicted results for U.S. exports and imports in 2005, based on the regressions with the East Asia variable, are shown in figure 4. Because exports to Canada and Mexico are so dominant, they are excluded from the figure to focus on exports to the other countries. The figure highlights two important results of the analysis. First, within a gravity equation framework, both exports and imports from China are larger than expected. In 2005, the export relationship, shown in the top panel, produces a 50 percent underestimate of exports to China that is markedly less than the large over-estimate of trade with countries like the United Kingdom and Japan. In contrast, imports from China, shown in the lower panel, exceed the predicted values by about 70 percent. U.S. trade with India is so small that it is difficult to identify in the figure. However, the predicted and actual values are very similar: the error in 2005 for exports is zero and the predicted level of imports is above by 5 percent.

Second, the figure brings out the point that, while exports to China may be a small share of U.S. GDP, they are relatively substantial compared to U.S. exports to other countries. The basic problem is that, except for Canada and Mexico, the United States has a low level of exports to all countries. Within that framework, exports to China are comparable to those to Germany and the United Kingdom. In other words, while U.S. exports to China are small in comparison to those of other countries, they are not small within the context of U.S. exports to other countries.

Services Trade

Traditionally, gravity equations have been applied to bilateral trade in goods. In recent years, however, the OECD has begun to publish data on the bilateral services

trade flows of its members. We obtained data covering the seven years from 1999-2005 for exports and imports of total services for the EU-15 and Japan.[18] The data for the United States were obtained from the Bureau of Economic Analysis and cover the years 1992-2006. We applied the same gravity model, outlined in equation (1), to the services trade of the United States, Japan, and the EU-15 (excluding intra-EU trade). Those regressions are reported in table 7.

Table 7: Gravity Equations for Services Trade: United States, Japan, and EU-15, 1999-2005

	United States		**Japan**		**European Union (15)**	
	Exports/ GDP (2)	*Imports/ GDP (2)*	*Exports/ GDP (2)*	*Imports/ GDP (2)*	*Exports/ GDP (2)*	*Imports/ GDP (2)*
Weighted Distance	-0.56	-0.57	-0.25	-0.32	-1.08	-0.87
	(-14.7)	(-10.0)	(-1.9)	(-3.3)	(-20.9)	(-13.5)
Population	0.71	0.78	0.84	0.79	0.74	0.81
	(40.1)	(29.2)	(15.5)	(20.2)	(40.5)	(35.2)
GDP per Capita	0.90	1.01	1.11	1.19	0.77	0.78
	(41.6)	(31.2)	(18.0)	(26.0)	(31.1)	(25.0)
Common Language	0.30	0.40			0.13	-0.23
	(8.0)	(7.1)			(1.8)	(-2.6)
Colony					0.29	0.23
					(3.8)	(2.4)
East Asia Region	0.49	0.57	1.68	1.71	0.73	0.92
	(11.2)	(8.7)	(9.5)	(13.2)	(8.4)	(8.4)
Constant	-37.37	-40.11	-45.36	-44.34	-31.19	-34.02
	(-55.6)	(-39.7)	(-22.5)	(-30.1)	(-62.4)	(-54.0)
adj_R^2	0.879	0.794	0.681	0.805	0.882	0.850
Observations	420	420	187	196	265	265

Source: Estimated by authors as described in text. All of the regressions are estimated within a fixed effects model allowing for shifts over years. All variables are measured in logarithms except for the categorical variables of common language, colony and the East Asia region. The data are from the OECD and cover 31 trading partners for the United States, 28 for Japan and 38 for the EU-15. T-statistics are in parentheses.

The results are very similar to those reported for goods trade in that distance, size, and income per capita again have large and highly significant elasticities, and the regressions fit the data very well. The coefficients on distance, however, are generally smaller and show more variability. In part, that is due to the smaller sample sizes; but we also estimated a set of parallel regressions for goods trade that was restricted to the same countries and years for which we had data on services trade. For the United States and Japan, the distance coefficients for services trade are smaller than for goods trade, but they were larger for the EU. It is notable that there is again a special positive effect for the East Asian economies of equal magnitude in

[18] The data on trade in services by partner country is available at: http://stats.oecd.org/wbos/default.aspx. At present, disaggregated partner country data below the level of total services is not available.

both the export and import regressions. The United States' services trade with East Asia is substantially greater than would be predicted by the standard gravity equation.

Figure 5a: US Service Exports to Selected Countries, 2005 with East Asia Adjustment (in million USD)

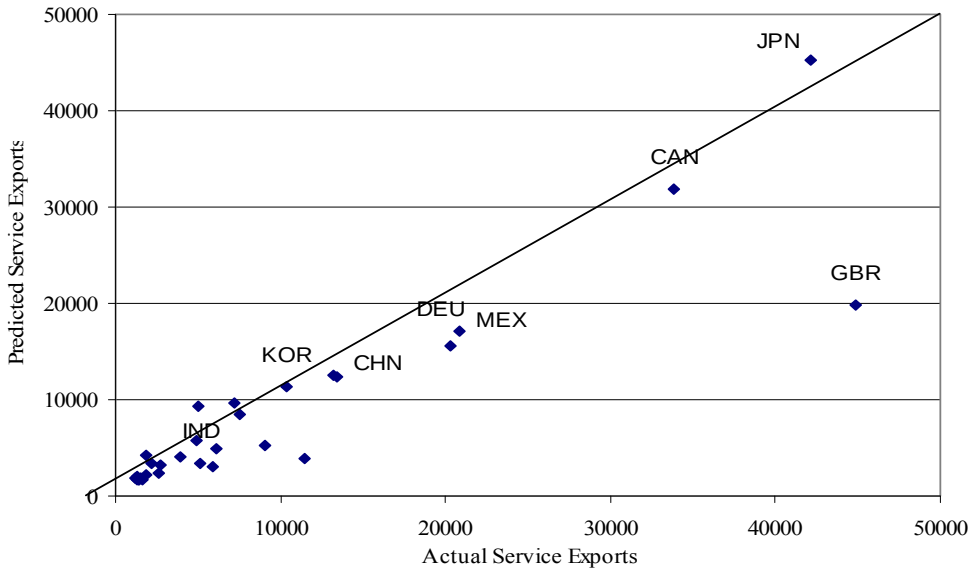
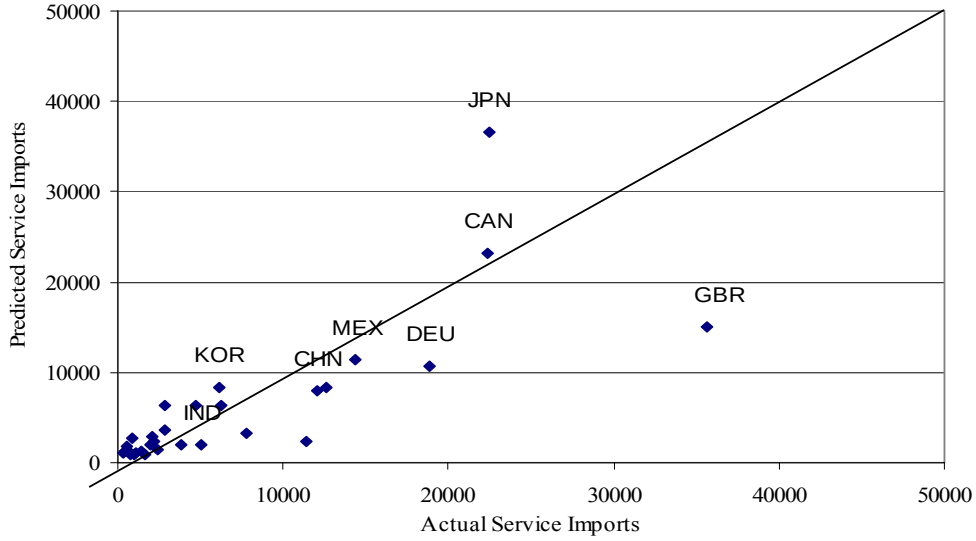


Figure 5b: US Service Imports from Selected Countries, 2005 with East Asia Adjustment (in million USD)



Source: Authors' calculations as in text.

As with goods, we are surprised by the magnitude of the distance variable as it can have little to do with freight costs. In fact, we re-estimated the U.S. regressions excluding travel and transportation, the components one would expect to be most sensitive to distance related transport costs: this had no significant effect on the parameters. Figure 5 shows the distribution of U.S. trade in services by partner country. The largest errors for both exports and imports are an under-prediction of

services trade with the United Kingdom and an over-prediction for Japan. The high level of trade with the United Kingdom is related to financial services because both countries are important global finance centers. Trade with China and India is very close to predicted.

7. Effects of the U.S. Trade Deficit

One interesting issue, shown in figure 4, is that U.S. exports to China and India are not small if the comparison is limited to U.S. trade alone. They are small only in comparison with other countries' trade. This issue can be developed more clearly with the ranking of U.S. trade with partner countries shown in table 8. While China is the second largest source of U.S. imports behind Canada, it is also the fourth largest export destination. In the comparison with Japan and the EU-15, the striking feature is the small share of total U.S. exports as a share of GDP.

Table 8: United States Top Trading Partners, 2005 (in billions U.S. dollars)

Country	**Exports**	**Percent**	**Rank**	**Country**	**Imports**	**Percent**
EU-15	182	20.1		EU-15	308	17.7
Canada	211	23.4	1	Canada	292	16.9
Mexico	120	13.3	2	China	270	15.6
China	58	6.4	3	Mexico	172	10.0
Japan	55	6.1	4	Japan	142	8.2
United Kingdom	39	4.3	5	Germany	87	5.0
Germany	34	3.8	6	United Kingdom	52	3.0
Korea	28	3.1	7	Korea	46	2.6
Netherlands	26	2.9	8	Venezuela, Rep. Bol.	35	2.0
France	23	2.5	9	France	35	2.0
Singapore	21	2.3	10	Malaysia	35	2.0
India	8	0.9	20, 17	India	20	1.1
Total	904			Total	1,733	
Trade Deficit	-828					
Country	*Exports*	*Percent of GDP*		*Country*	*Imports*	*Percent of GDP*
US	904	7.3		US	1,733	14.0
Japan	595	13.1		Japan	515	11.4
EU15	1,459	11.4		EU15	1,582	12.4
incl. intraEU	3,688	28.9		incl. intra EU	3,810	29.9

Source: IMF Direction of Trade Statistics and authors' calculations.

As shown in the lower part of the table, total exports are only 7.3 percent of GDP in 2005, compared to 13.1 and 11.4 for Japan and the EU-15 respectively. In contrast, the United States actually imports a slightly larger share of its GDP than either Japan or the EU-15. The table shows the extent to which the comparison of the relative importance of exports is distorted by the large overall trade deficit of the United States. Given that the overall trade deficit of the United States is equal to 90 percent

of total exports, the comparison of U.S. trade with most partner countries is bound to appear unfavorable.

It is sometimes alleged that U.S. firms, provided with access to a large domestic market, are insufficiently interested in the development of export opportunities.[19] In addition, the U.S. government was criticized in past years for restricting the exports of those technology products for which the United States has a comparative advantage. As a simple exploration of this idea, we combined the data for the EU-15, Japan, and the United States, and fit a common gravity equation. The basic result is shown in columns (1) and (3) of table 9. As would be expected from the regressions in table 6, the imposition of common coefficient values for all three industrialized regions has little effect. In columns (2) and (6), we added a categorical variable for the United States. In essence, the U.S. performance is evaluated against a peer group composed of an average of the EU-15 and Japan. The coefficient is negative and highly significant in the export equation but zero in the import equation. The results are at least suggestive of the view that the United States is a weak exporter relative to other high-income economies, but that its imports are quite normal.[20]

We also sought to determine if we could explain some of the variations in U.S. performance as related to exchange rate effects. We do not have effective exchange rate measures covering all of the trading partners, and in particular, we do not have a means of accounting for competitor effects in third markets. However, as a partial measure of changes in competitive conditions over time, we included the multilateral real exchange rate for each of the respondent countries. Since there is no variation across the partner countries, the exchange rate has to substitute for the fixed-effect estimation.

The results are presented in columns (3) and (6). The exchange rate elasticity is a negative -1.1 for exports and a positive 0.6 for imports. This smaller effect on the nominal value of imports is expected, since a rise (appreciation) in the real exchange rate promotes a rise in the quantity of imports, that is partially offset by a decline in price. No such offset exists on the export side.[21] Strikingly, the inclusion of the exchange rate does not alter the size of the coefficient on the U.S. categorical variable however. Evidence of relatively poor U.S. export performance persists even after adjustment for the exchange rate.

[19] Admittedly, this is a more popular argument outside of the United States, but American multinational firms have also been willing to use foreign affiliates as an alternative to exports from the United States. The sales of foreign affiliates less their purchases from U.S. parents, $3.9 trillion in 2005, far exceed the comparable measures of net sales of foreign firms in the United States, $2.3 trillion (Lowe, 2008).

[20] A similar point about the weakness of exports accounting for the deterioration of the U.S. trade balance is advanced by Baily and Lawrence (2006, pp 228-36). Using a different methodology, they demonstrate that the weakness cannot be attributed to lack of growth in U.S. export markets or the commodity composition of trade.

[21] In reality, the adjustment process would be more complex, in part because of the need to take account of possible limits of the pass through of exchange rate changes into export and import prices. See Cline (2005) and Mann (1999) for more detailed discussions.

Table 9: Combined Gravity Model for US, Japan, and EU-15

	Exports/ GDP (1)	Exports/ GDP (2)	Exports/ GDP (3)	Imports/ GDP (1)	Imports/ GDP (2)	Imports/ GDP (3)
Weighted Distance	-1.102	-1.098	-1.123	-1.020	-1.020	-1.007
	(-61.2)	(-62.6)	(-63.4)	(-39.7)	(-39.7)	(-38.6)
Population	0.831	0.837	0.838	0.976	0.976	0.975
	(172.3)	(178.0)	(178.8)	(139.5)	(139.4)	(139.4)
GDP per Capita	0.973	0.974	0.972	1.062	1.062	1.063
	(153.1)	(157.4)	(157.5)	(116.6)	(116.6)	(116.6)
Common Language	0.258	0.529	0.544	0.562	0.562	0.554
	(10.9)	(20.7)	(21.3)	(16.7)	(15.0)	(14.7)
Colony	0.556	0.156	0.326	0.698	0.699	0.610
	(21.9)	(5.2)	(9.2)	(19.3)	(16.0)	(11.6)
East Asia Region	0.400	0.407	0.414	0.755	0.755	0.751
	(15.1)	(15.8)	(16.1)	(19.9)	(19.9)	(19.8)
United States		-0.586	-0.609		0.000	0.012
		(-24.2)	(-25.1)		(0.0)	(0.3)
Log Average Exchange Rate*			-1.119			0.586
			(-8.7)			(3.1)
Constant	-34.325	-34.249	-28.940	-38.490	-38.490	-41.276
	(-170.8)	(-175.1)	(-45.1)	(-133.9)	(-133.8)	(-43.6)
adj_R2	0.840	0.848	0.849	0.762	0.762	0.762
Observations	10570	10570	10570	10433	10433	10433

Source: Estimated by authors as described in text.
*Notes: All of the regressions are estimated within a fixed effects model allowing for shifts over years. All variables are measured as logarithms except for the categorical variables of common language, colony, the U.S., and the East Asia region. *Computed as a simple average of the prior five year trade-weighted real exchange rates. Data taken from JPMorgan. T-statistics are in parentheses.*

As shown in table 8, the U.S. trade deficit is roughly equal to total exports; and if we projected a future adjustment that restored a trade balance, the export share would roughly double as a share of GDP. If we also adopted the reasonable assumption that the adjustment would spread in proportionate terms across all trading partners, the Chinese and Indian markets would be much more important to the United States.

8. Conclusion

The large U.S. trade imbalance with Asia is a frequent topic of concern in the U.S. media and policy discussion. There is a perception that the imbalance is somehow the result of unfair trade practices. The trade issues take on added importance with respect to U.S. economic relations with China and India who are emerging as global centers for manufacturing and business services respectively. In this paper, we have argued that it is the low level of U.S. exports to the region, not the magnitude of imports that appears puzzling. Thus, we have examined various possible explanations for the low exports, focusing on trade with the two economic giants, China and India, with whom we have particularly large trade deficits. U.S. imports from China, for example, scaled by U.S. GDP, are similar to those of Japan and EU-15 imports from China as a share of their own GDPs. In contrast, the U.S. exports a much smaller share of its GDP to China than either the EU-15 or – especially – Japan. Indeed, U.S. exports to China are still less than a quarter of its imports, while Japan exports more to China than it imports. Even though U.S. exports to China have been growing rapidly since 2002, this growth is from such a small base that it would take a long time to have much effect on the bilateral balance. Our analysis also highlights the importance of trade in services with China, which appears to significantly exceed the more publicized services trade with India.

Our main findings are as follows. First, the poor performance of U.S. exports of goods does not reflect an unusual export composition. Like Japan and the EU-15, the distribution of commodities that the U.S. exports to China is quite similar to the basket it exports to the rest of the world. Furthermore, with the exception of agricultural goods and raw materials, the mix of commodities that the U.S. exports to China is very similar to the exports from Japan and Europe. Thus, the U.S. is clearly competing with these countries, especially in the Chinese markets for capital goods and electronics. We find no evidence that the composition of U.S. trade with China is distorted. The situation is less clear-cut for India where the composition of U.S. exports is less correlated with its global trade and with the exports of the EU-15 and Japan.

Second, small U.S. exports to China and India may be due in part to the relatively small presence of U.S. multinationals. Operations of these affiliates to date have largely focused on serving the domestic markets of both China and India, with relatively little trading links to their operations in the U.S. In any case, U.S. FDI to both countries is now growing rapidly, though from a very small base.

Third, our more formal econometric analysis using gravity equations highlights both expected and unexpected dimensions of the importance of distance. Like the large prior literature that uses the gravity framework to explain trade flows, we find distance always to be a very important and significant determinant. Since China and India are far away from the U.S., one would expect that controlling for distance would

help explain the relatively small U.S. exports to China, with the large imports emerging as an outlier instead. Quite surprisingly however, we find that U.S. exports to East Asia and imports from the region are both unexpectedly large. Even after adjustment for the East Asia region, U.S. exports to and imports from China are both larger than expected. Trade with India is about what would be predicted, however.

Finally, our most important finding is that the low level of U.S. exports is a global phenomenon and not one limited to trade with the Asian economies. At present, the United States has a trade deficit with nearly every country of the world, and the imbalance with the Asian economies stands out primarily because they account for a large proportion of total trade. At seven percent of GDP, U.S. exports are only about half the level of its imports and only half the share of GDP reported for Japan and the EU-15. Most of the concerns about trade with the Asian economies would be resolved by an adjustment of the U.S. global trade balance. However, we note that the last two decades have also been notable for the strong expansion of U.S. multinational firms. Ownership-based estimates of trade, which take into account the net earnings of foreign affiliates, imply a significantly smaller trade imbalance for the United States.[22] Thus, U.S. firms have been very active and successful in the global economy, even though they have not done it through an emphasis on exports.

It is important to stress that the relatively weak U.S. export performance we have identified is not a reflection of weak U.S. industrial performance overall. In contrast, overall growth and gains in TFP were strong during the 1990s and early parts of this century, such that the U.S. played a substantial role as an engine of growth for the global economy. This context makes relatively small U.S. exports all the more surprising. While we do not have a fully satisfactory explanation for the pattern of weak export performance, we conclude by suggesting some possibilities. J. David Richardson (1993) highlighted a variety of impediments to U.S. exporters. His work stresses a deficiency of supporting infrastructure and lack of access to trade finance relative to our major competitors in global markets. Baily and Lawrence (2006) focus on the decline in the U.S. export share, placing much of the blame on an over-valued dollar. While we too find an important role for exchange rates, our analysis does not suggest that this explains much of the fact that U.S. exports are relatively low. Finally, it is often argued that many U.S. firms display a limited interest in exporting, preferring to focus on a very large and expanding domestic market. Exploring these possible explanations further needs to be a focus of future research.

[22] The U.S. Bureau of Economic analysis reports an ownership-based estimate of the trade deficit in 2006 of $584 billion compared to $758 billion for the conventional concept – available at: http://www.bea.gov/international/xls/1982-2006table.xls

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