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## Overlooked Opportunity: Tradable Business Services, Developing Asia, and Growth

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ADB Economics  
Working Paper Series



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J. Bradford Jensen

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## **ABSTRACT**

This paper argues that developing Asia is overlooking an opportunity for increased growth and development through trade in business services. Developing Asia would benefit from liberalizing services trade as it has benefited from liberalizing goods trade. This argument rests on these key findings: business services are important for growth, developing Asia is relatively under-endowed with business services, many business services are tradable, and developing Asia has relatively high barriers to services trade.

Keywords: services, trade barriers, Asia

JEL classification: F13, F14, F63





## I. OVERVIEW

This paper argues that developing Asia is overlooking an opportunity for increased growth and development through trade in business services. Developing Asia would benefit from liberalizing services trade as it has benefited from liberalizing goods trade. This argument rests on these key findings:

1. **Business services are important to growth:** Business services are important intermediate inputs to a broad range of activities including infrastructure and higher value added manufacturing. Further, business services are associated with higher levels of economic development.
2. **Developing Asia has relatively small business service sectors:** While it is difficult to draw detailed conclusions regarding business services in developing Asia because of a lack of detailed data, it appears that developing Asia is relatively under-endowed with business service production—i.e., business services make up a relatively smaller share of economic activity in developing Asia. Business services appear to be relatively more expensive (based on relative wages) than in developed economies.
3. **Business services are tradable:** Many business service activities are tradable and developed economies have relatively large and inexpensive business service sectors. There appear to be significant opportunities for gains from trade in business services.
4. **Developing Asia has relatively high barriers to services trade:** A number of large countries in developing Asia have relatively high barriers to services trade.

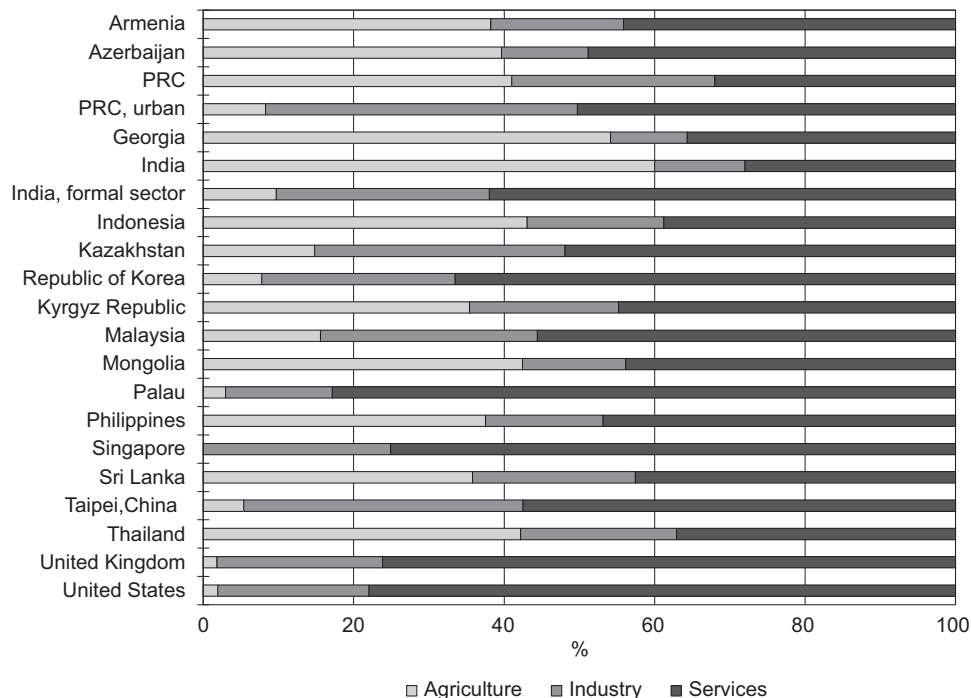
The empirical analysis in this paper is less than satisfying, but is a result of the relative paucity of empirical research on the service sector. A major contributing factor to this lack of research is the lack of data on the service sector. Even in developed economies, the service sector is not as well measured as the manufacturing sector (or agriculture). Further, the linkages between sectors are not well understood. The arguments in this paper will rely on rough evidence, fragments of empirical research, and will appeal to economic theory to make the arguments. A primary policy conclusion is that to better understand the service sector and its role in economic growth better data on the service sector needs to be collected and published.

Nonetheless, in spite of the lack of data, it is possible to see the outline of an overlooked opportunity for developing Asian countries to increase growth by reducing their relatively high barriers to services imports. Reducing barriers to services trade would enable developing Asian countries to take advantage of the standard gains to trade—importing better and less expensive intermediate imports from countries that have comparative advantage in these activities. Access to less expensive business service inputs would undoubtedly increase productivity in the manufacturing sector and the service sector and facilitate growth in developing Asia.

## II. (BUSINESS) SERVICES AND ECONOMIC DEVELOPMENT

The service sector is large and diverse, encompassing activities ranging from hotel, travel, tourism, education, hair salons, health, finance, computer systems design, architecture, engineering services, accountancy, attorneys, and so on, and accounts for a large share of employment in many countries. Figure 1 shows the shares of employment in services, agriculture, and industry for developing Asia, the United Kingdom, and the United States. There is considerable variation in the size of the service sector. In the more advanced economies such as the United States and the United Kingdom, the service sector share is greater than 70%. Singapore and the Republic of Korea also have high service sector employment shares. Meanwhile in the People's Republic of China (PRC) and India, countries with lower income per capita, the service sector accounts for only about a third of employment, but even this is larger than manufacturing's share. Even this simple figure shows that large service sectors are not the exclusive domain of advanced economies, and there appears to be a positive relationship between the service sector's share of economic activity and living standards.

**Figure 1: Sector Shares by Economy**



PRC = People's Republic of China.

Sources: Central Intelligence Agency. The World Factbook; International Labour Organization, LABORSTA Database.

Noland, Park, and Estrada (2012) report labor productivity for a broad range of developing Asian countries and average for countries in the Organization for Economic Cooperation and Development (OECD). Labor productivity in the service sector overall lags in developing Asia. The low levels of productivity in developing Asia's service sector are a concern. While the existing literature on the relationship between the service sector and other sectors is limited, in a key survey Francois and Hoekman (2010) review a range of studies covering a number of countries that demonstrate the broad-based impact of a competitive service sector. They cite studies showing that service sector productivity is a key driver of

aggregate productivity growth differences across developed economies. They also cite a range of studies showing that increased levels of competition in the service sector—and the higher levels of service provision that such competition encourages—have a positive impact on manufacturing productivity and lead to increases in manufacturing exports.

The linkages between service sector size and productivity and living standards is explored in a paper by Eichengreen and Gupta (2009). They analyze the relationship between the service sector's share of GDP and income per capita, and find a positive correlation overall. But they also find that the relationship does not hold for all services. Decomposing the service sector into three groups of activities, they observe that a group they call “traditional services” (retail and wholesale trade, transport and storage, and public administration and defense) actually has a negative relationship with income per capita. They observe a positive relationship for the other two groups: The first is a mixture of traditional and modern services consumed primarily by households (education, health and social services, accommodations and restaurants, and other personal services), and the second is composed of modern services that are primarily business services (including financial intermediation, computer services, communication services, and legal and technical services).

The Eichengreen and Gupta results suggest that one issue with discussing the “service sector” as a single sector is that it is so large and diverse it is difficult to analyze as a single entity. In this paper, I will separate one segment of the service sector and focus on it as a separate category. I focus on what I call “business services.”

I will take as business services activities included in the North American Industrial Classification System categories that are in the 50s.<sup>1</sup> These activities include the information sector, finance and insurance, real estate, professional, scientific, and technical services, management, and administrative support and waste remediation services.

Business services provide key intermediate inputs to a range of other sectors—including manufacturing. Banking, legal services, marketing, research and development (R&D), design, engineering, project management, software, and telecommunications are crucial inputs to other activities throughout the economy. These business services have the capacity to improve the quality, efficiency, and competitiveness of other firms in the economy. In addition, these services establish key linkages to the global economy—and, as a result, are key drivers of export growth (even of manufactured goods).

## **A. Business Services are Different**

In addition to providing key intermediate inputs to many other sectors, business services are qualitatively different from personal services (North American Industry Classification System [NAICS] 60s, 70s, and 80s) and wholesale and retail trade (NAICS 40s). One important dimension on which business service activities differ from other service sectors (and even the manufacturing sector) is the share of workers with college and advanced degrees and average wages.

Table 1 shows the share of workers with a college degree and an advanced degree for a range of US sectors. Note that the business service sector is relatively education intensive—it has a higher share of workers with a college degree. About 40% of workers in the business

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<sup>1</sup> Use the United States data as a benchmark for many empirical analyses as the United States service sector data tend to be the most detailed for large countries.

service sector have a college degree; in contrast, about 25% of workers in the manufacturing sector have a college degree. The share of workers with an advanced degree show similar patterns—business services are skill intensive. Associated with these higher levels of educational attainment are higher average earnings. The business service sector has the highest average earnings. The fact that business services have higher educational and skill requirements will be an important theme in this paper.

**Table 1: Education and Earnings in Selected Sectors in the United States, 2007**

<b>Sector</b>	<b>Workers with a College Degree (%)</b>	<b>Workers with an Advanced Degree (%)</b>	<b>Average Earnings (\$)</b>
Manufacturing	23	7	49,081
Business services	44	14	59,096
Personal services	36	16	35,261
Wholesale and retail	19	3	35,819

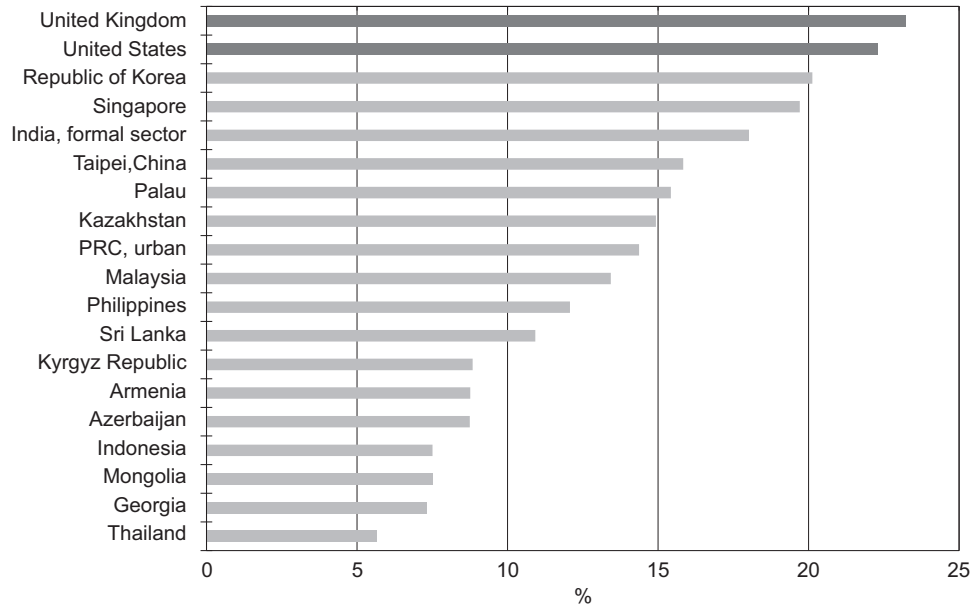
Source: Author's calculations, 2007 American Community Survey.

## **B. How Does Developing Asia Compare in Business Services Production?**

Figure 2 below provides a more detailed look at the share of total employment accounted for by the business service sector for a subset of developing Asian countries. It is notable and unfortunate that even this relatively aggregated level of data is not available for either India or PRC overall. For PRC, business service level data are only available for “urban” PRC. “Urban” PRC accounts for only about 15% of PRC’s labor force. Thus this is a less than comprehensive (and likely misleading) perspective on the sectoral composition of PRC’s economy.<sup>2</sup> The data on India are also less than comprehensive. For India, detailed industry data are only available for the formal sector.

The business service sectors in most developing Asian countries are small relative to the size of the business service sector in the United States or the United Kingdom. With the exception of Singapore and the Republic of Korea, developing Asia countries tend to have relatively small business service sectors. It is notable that even “urban” PRC has a relatively small business service sector. “Formal sector” India has a reasonably large business service sector, though this is probably not representative of India overall.

<sup>2</sup> Urban PRC has a different sectoral composition than PRC overall. For all of PRC, the primary sector accounts for 40% of employment; for urban PRC the primary sector accounts for 8%.

**Figure 2: Business Services Share in Total Employment**

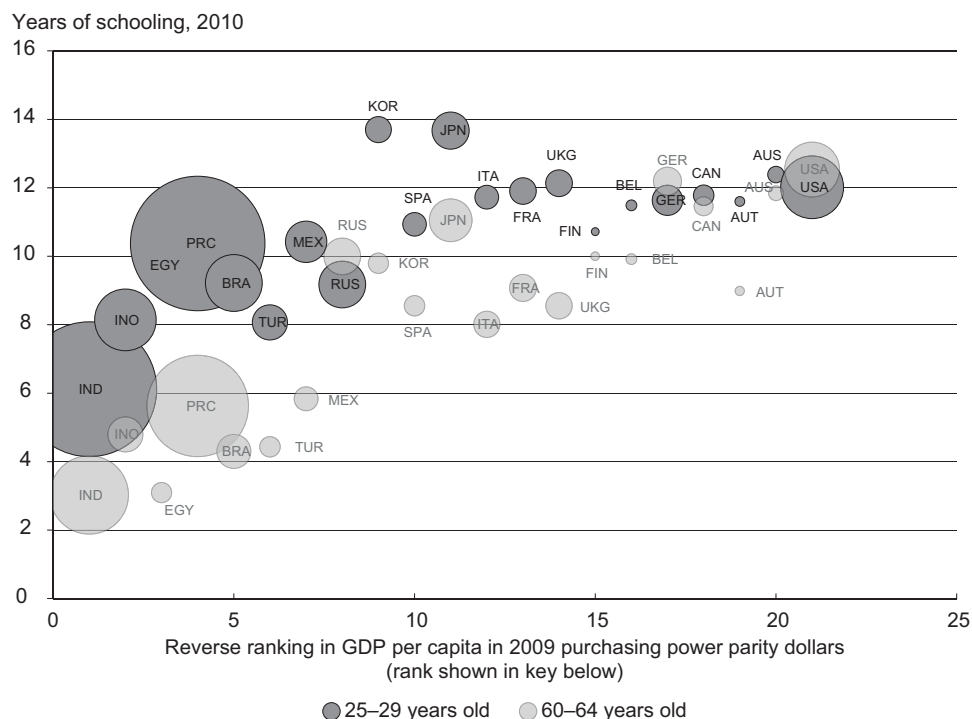
PRC = People's Republic of China.

Source: International Labor Organization, Laborsta Database.

### C. Why are Business Services Underdeveloped in Emerging Asia?

The data presented above suggest that business services are skill intensive and that business service sectors in developing Asia tend to be smaller (as a share of the labor force) than business service sectors in the United States or the United Kingdom. A key theme of this paper is that skill endowments are an important driver of the size and productivity of the business service sector. To understand the prospects for business service sector growth (and the associated productivity growth and higher living standards associated with a robust business service sector) in developing Asia, we need to examine information on the level of educational attainment in developing Asia.

Figure 3 shows the average level of educational attainment for select countries for 60 to 64 year olds (with the size of the bubble representing the size of the labor force) for 2010. The most striking feature of the chart is how big an outlier the United States is in terms of educational attainment for the cohort at the peak of their careers. The United States has historically been a very skill abundant place, especially among more populous countries. While it is difficult to prove definitively, it seems likely that these skill endowment patterns that have existed for at least the past 40 years have played an important role in shaping the size and productivity of the business service sectors across countries. Because business services are skill intensive, countries that are relatively skill abundant are likely to have larger (as a share of the labor force) and more productive business service sectors. Historically relatively low levels of educational attainment in developing Asia are undoubtedly a prime contributor to the level of development of the business service sector in developing Asia.

**Figure 3: Average Years of Schooling by Age Cohort, 2010**

AUS = Australia (20), AUT = Austria (19), BEL = Belgium (16), CAN = Canada, (18), EGY = Egypt (3), BRA = Brazil (5), FIN = Finland (15), FRA = France, (13), GDP = gross domestic product, GER = Germany (17), IND = India (1), INO = Indonesia (2), ITA = Italy (12), JPN = Japan (11), KOR = Republic of Korea, (9), MEX = Mexico (7), PRC = People's Republic of China (4), RUS = Russian, Federation (8), SPA = Spain (10), TUR = Turkey (6), UKG = United Kingdom (14), USA = United States of America (21).

Note: Bubble size indicates the size of the workforce.

Source: Barro and Lee (2010).

But, history is not destiny. Figure 3 also shows average educational attainment for the 25- to 29-year-old cohort for the same group of countries. Most striking in this figure are the dramatic increases in average educational attainment across a range of emerging markets. As educational attainment in developing Asia converges with that in the United States and the United Kingdom, it seems likely that the size and productivity of the business service sector will also converge. Thus, in the long run, the source of increasing productivity in the business service sector (and the subsequent increases in productivity throughout the economy from improved access to these important intermediate inputs) is increases in educational attainment.

Yet, the studies by Eichengreen and Gupta (2009) and Francois and Hoekman (2010) suggest that a healthy and efficient business service sector is an important input into productivity and growth across the economy. Thus, it seems likely that until the increases in educational attainment work their way through the economies of developing Asia, developing Asia is likely to suffer from dampened growth prospects because of constraints on the business service sector. So, a key question is whether there is another way—other than waiting two or three decades for the current well-educated cohort—to improve access to business services in developing Asia?

## D. Opportunities to Mitigate Issue through Trade?

Developing Asia currently appears to be constrained by a small and relatively inefficient service sector. In the long run, increases in educational attainment in Asia will alleviate this problem. Figure 3 suggests that Asia is making rapid gains in educational attainment, but it might take decades for these to translate into changes in the structure of developing Asian economies. Is it possible to alleviate this constraint in the short-run? When countries have a lack of natural resources such as oil or particular agricultural products, they often engage in international trade to gain access to these types of resources. What are the prospects that developing Asia could trade to mitigate the impact of its small and inefficient business service sector?

### *What is Trade in Services?*

Most of us are accustomed to thinking of trade as trade in goods. Commodities such as wheat, copper, and crude oil, as well as manufactured goods such as clothing, furniture, consumer electronics, automobiles, and jet aircraft, have long been shipped all over the world. One can visit any port or border crossing and see evidence of this kind of trade. So when we speak of “trade in goods,” or “merchandise trade,” it is not difficult to conjure up a clear mental image.

Trade in services, however, is somewhat harder to conceptualize. Because services are intangible, the image of a service being traded comes less readily to mind. Yet services are traded, and in a variety of ways. The General Agreement on Trade in Services (GATS)<sup>3</sup> provides a useful definition of what is meant by “trade in services” (WTO 1995):

For the purposes of this Agreement, trade in services is defined as the supply of a service:

- (a) from the territory of one Member into the territory of any other Member;
- (b) in the territory of one Member to the service consumer of any other Member;
- (c) by a service supplier of one Member, through commercial presence in the territory of any other Member;
- (d) by a service supplier of one Member, through presence of natural persons of a Member in the territory of any other Member.

The GATS definition embodies what are generally referred to as the four modes of trade in services:

- Mode 1 is cross-border provision, for example when software is produced in one country and shipped via the Internet to another.
- Mode 2 is consumption abroad, for example when a vacationer travels to a resort in another country and purchases hotel accommodations, meals, and other services there.
- Mode 3 is commercial presence in a foreign country, for example when a restaurant chain opens a branch outside its home country.
- Mode 4 is temporary movement of natural persons across borders, for example when a business consultant travels to visit a foreign client.

Mode 3, also called foreign direct investment, is undoubtedly beneficial—to both outward investment by United States companies abroad and inward investment by foreign companies

<sup>3</sup> General Agreement on Trade in Services. [http://www.wto.org/english/docs\\_e/legal\\_e/26-gats.pdf](http://www.wto.org/english/docs_e/legal_e/26-gats.pdf)

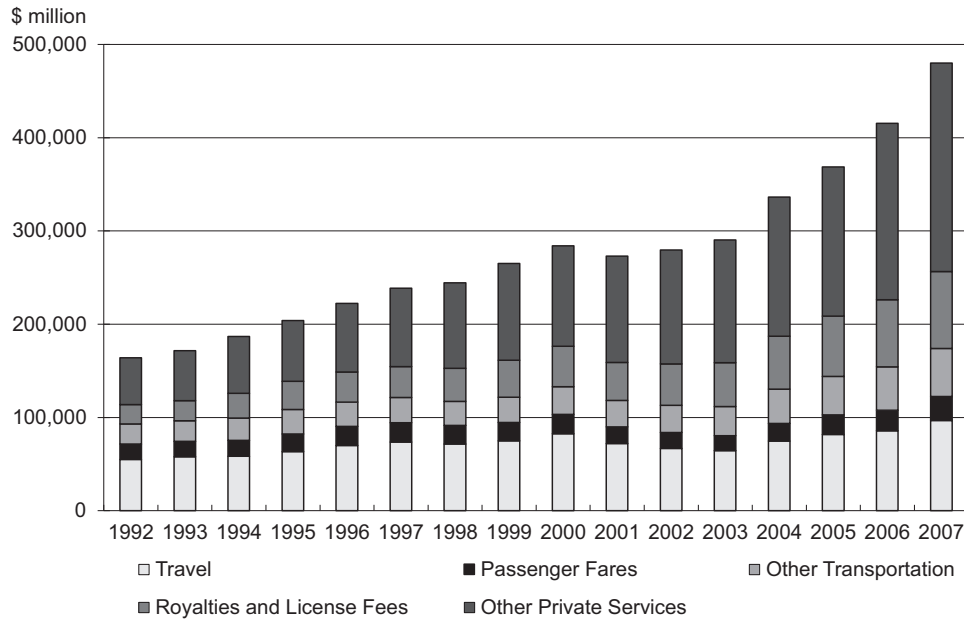
into the United States. For example, the expansion of US service firms abroad allows them to take advantage of their successful business models around the world when trade in services via the other modes is not possible. Such investment undoubtedly increases total firm sales and generates profit flows to the headquarters of these firms, which benefit the firms' owners and their workers, increase the tax base where the headquarters are located, and offer a range of other benefits both here and in the foreign markets being served. Unfortunately, identifying and measuring the impact of these benefits is very difficult. Therefore, for the sake of tractability, we will focus on the other three modes.

Figure 4 and Figure 5 show trends in exports and imports of services in the United States—service trade in the United States increased steadily over the decade ending in 2007. Both service exports and service imports roughly doubled, with exports growing slightly faster in the last few years of the period. The Bureau of Economic Analysis (BEA) divides private services into five main groups: travel, passenger fares, other transportation, royalties and license fees, and “other private services” (OPS), a catchall category that includes education, financial services, insurance services, telecommunications, and business, professional, and technical services—corresponding roughly to the “business services” that are the focus of this paper. Figures 4 and 5 show the composition of service exports and imports by the BEA's categorization from 1992 to 2007. Although all of the categories show growth over the period, OPS grew the fastest, with both imports and exports more than doubling. OPS also contributed the most to overall service growth, accounting for more than half of the increase in service exports and about half of the increase in service imports.

The data presented in Figures 4 and 5 suggest increases in business services trade by the United States with the rest of the world. In the hope of understanding the potential scope for increased services trade, it would be desirable to examine the developments in services trade in more detail; unfortunately, existing data do not provide very much detail on services trade. The next section describes a new methodology for identifying, at a very detailed level, which service activities are tradable.

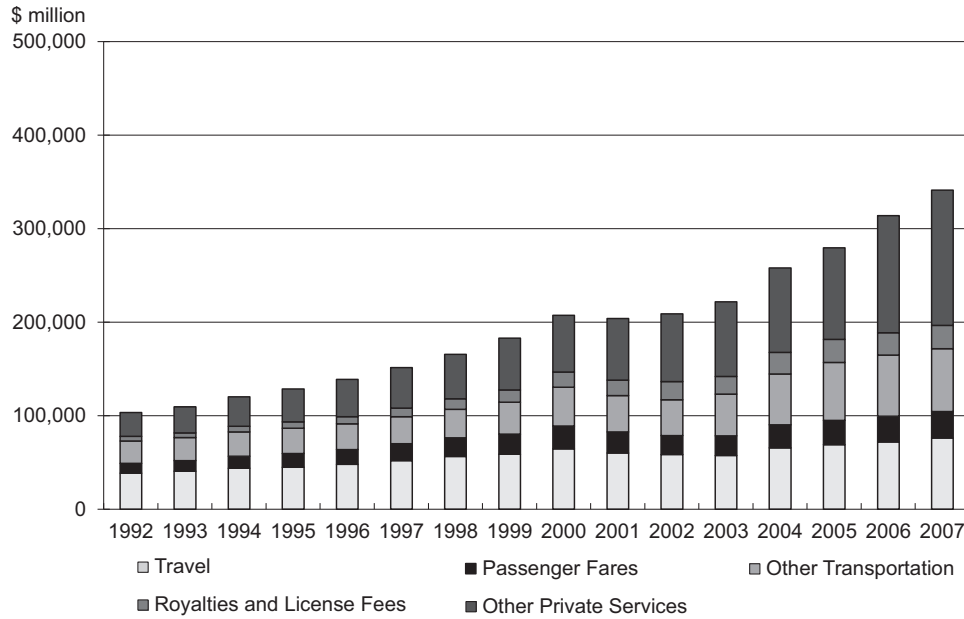


**Figure 4: Composition of Service Exports, United States**



Source: Bureau of Economic Analysis.

**Figure 5: Composition of Service Imports, United States**



### III A NEW APPROACH TO IDENTIFYING TRADABLE SERVICES

Jensen (2011) develops a concept called “tradability” and applies it empirically to a range of service industries and occupations. The concept of tradability is based on the geographic concentration of production within the United States. Using geographic concentration as an indicator of international trade potential, we can arguably measure what has so far gone unmeasured: We can identify at a detailed level which service activities appear to be “traded” within the United States and thus “ought” to be traded internationally.

The methodology relies on the geographic concentration of production within the United States to identify industries and occupations that appear to be “traded” within the United States.<sup>4</sup> The basic idea is simple. If we observe more of a service being produced in one location than consumers in that location are likely to want to consume, then the excess services must be being consumed elsewhere. That implies that the service is somehow being “shipped” to a different location. If a service can be shipped from one US location to another, there is no inherent reason why it cannot be shipped from a US location to a foreign location—that is, traded. Therefore that service is, in principle, tradable.

An important advantage of this methodology is that it can identify both service industries *and service occupations* that appear to be traded within the United States. This matters because many of the service activities that are reportedly being offshored are tasks within larger production processes. For example, bank call centers can be relocated offshore without entire banks or the banking industry moving offshore. Occupations correspond more closely to these distinctions between activities than do industries.

Having used the methodology to classify industries and occupations as tradable or nontradable, we can then examine how large a swath of US service activity is potentially exposed to import competition—and which service activities offer prospects for increased exports. We can also observe the number of workers employed in these activities. Later chapters will put this classification system to use to reveal fascinating patterns in service tradability and trade potential.

#### A. The Intuition Behind the Approach

Goods that are traded tend to be geographically concentrated (whether to capitalize on increasing returns to scale, or to gain access to inputs like natural resources or workers with specific skills, or for other reasons), whereas goods that are not traded tend to be more evenly distributed across geographic space, or, more precisely, to be distributed coextensively with demand.

The notion of using geographic concentration to identify tradable activities is related to a long tradition among geographers and regional economists of using the geographic concentration of economic activity to identify a region’s export or manufacturing base. The idea was that if a region specializes in a manufacturing activity—think Boeing and airplanes in Seattle—it is likely to export the product in which it specializes.

The measure used to determine whether a region specializes in a particular activity is typically some variant of a location quotient. A location quotient measures a region’s share of

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<sup>4</sup> This section draws heavily on Jensen and Kletzer (2006). Here and later, when for brevity’s sake we say that an industry or occupation is “tradable,” we of course mean that its output is tradable.

industry output or employment and compares that share with (that is, divides it by) a measure of the region's share of overall demand (typically measured using the region's share of total population or of total employment, as in Table 2). If a region has a larger share of an industry's activity than is predicted by demand in the region, the region is considered to be specialized in the activity.

The example of aircraft production in Seattle can be used to illustrate this concept. Seattle's share of US aircraft manufacturing employment is about 11%, and its share of total US employment is about 1.6%. Thus, Seattle has a much greater share of aircraft production employment than of total employment: Its location quotient for aircraft production is 11 divided by 1.6, or about 6.9. It is safe to assume that this concentration of aircraft production is not due to people in Seattle consuming more airplanes than other parts of the country; rather, they "export" planes to the rest of the country and export them to other countries in exchange for other goods and services. We can be quite comfortable thinking of Seattle as specializing in aircraft production and exporting aircraft.

Table 2 from Jensen (2011) reports location quotients for selected large metropolitan areas and selected industries in the United States. It shows clearly that several other manufacturing industries are geographically concentrated just as aircraft is in Seattle (the location quotients for these are highlighted in the Table). For example, motor vehicle production is concentrated in the Detroit area, with a location quotient of 11.5. Again, this is not because people in the Detroit area purchase 11.5 times more cars than the rest of the country, but because Detroit has specialized in motor vehicle production and exports cars in exchange for other goods.

Table 2 also shows that some manufacturing industries do not exhibit geographic concentration. For example, in none of the metropolitan areas listed do structural metals have a location quotient above 1; the location quotient for gypsum and lime production exceeds 1 in only two areas and never exceeds 2.<sup>5</sup> Both of these industries produce goods with relatively low value by weight, which suggests that shipping them from city to city may be too costly to be worthwhile. Whatever the reason, these manufacturing industries appear to be nontraded.

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<sup>5</sup> The area with the largest location quotient for this industry, Las Vegas, was experiencing a construction boom in 2007, when these data were gathered. Gypsum and lime are important inputs to construction. Thus, in this case the relatively high location quotient could be due to unusually high local demand for the industry's goods.

**Table 2: Location Quotients, Select Areas and Industries**

Industry	Boston	New York	Raleigh-Durham	Detroit	Las Vegas	Seattle	San Francisco	Los Angeles
Cement, concrete, lime, and gypsum product manufacturing	0.5	0.4	0.9	0.4	1.8	1.3	0.4	0.7
Structural metals, and tank and shipping container manufacturing	0.7	0.4	0.7	0.7	0.7	0.9	0.6	0.7
Aircraft and parts manufacturing	0.9	0.5	0.3	0.4	0.2	6.9	0.2	1.8
Motor vehicles and motor vehicle equipment manufacturing	0.1	0.1	0.3	11.5	0.1	0.3	0.3	0.4
Grocery stores	1.0	1.0	1.4	1.0	0.9	0.9	0.9	0.9
Software	3.5	0.7	3.9	0.8	0.1	6.9	4.7	1.0
Motion pictures and video industries	0.7	1.8	0.5	0.7	0.9	0.7	1.6	5.7
Internet service providers	1.0	0.7	1.3	0.3	0.8	2.2	7.2	1.4
Securities, commodities, funds, trusts, and other financial investments	2.5	3.2	0.6	0.6	0.5	0.7	1.5	0.9
Scientific research and development services	2.9	0.9	4.8	0.6	0.3	1.4	3.1	0.9
Travel arrangements and reservation services	1.3	1.2	0.5	1.0	3.0	1.8	1.0	1.3
Offices of dentists	1.1	1.1	1.2	1.3	1.2	1.3	1.4	1.1
Other amusement, gambling, and recreation industries	0.8	0.7	0.7	1.0	7.1	1.4	1.0	1.2
Barber shops and beauty salons	1.0	1.0	0.8	1.1	0.9	0.9	1.0	1.1

Source: Jensen (2011).

Economists have long thought of services as nontradable because many services require, or seem to require, face-to-face interaction. The quintessential services of this type are personal services like haircuts or visits to the dentist's office. Because these services are difficult to provide at a distance, they tend to be distributed in proportion to the population in a region—we do not see large concentrations of these service activities in one place. Hence their location quotients are uniformly low. For example, Table 2 shows that the location quotients for grocery stores, dentists' offices, and barber shops and beauty salons are all close to 1, indicating that these services are not being traded across metropolitan areas.

But other services do not require face-to-face interaction, and many of these do appear to be traded within the United States. For example, in addition to its concentration in aircraft production, Seattle has a disproportionate share of US employment in software publishing, with a location quotient for that industry of about 6.9. Boston, Raleigh-Durham, and San Francisco also show large concentrations of software production activity. Again, this is not because people in Seattle or these other regions consume more software than do people other parts of the country; rather, Microsoft and other software publishers based in Seattle and these other cities (the San Francisco metro area includes San Jose and Silicon Valley) produce software and then

export it in exchange for other goods and services. Software is thus a service that is traded with other regions.

Nor is it just software and other information media (such as movies in Los Angeles) that are geographically concentrated. Table 2 reports several other examples, including internet service providers (concentrated in Seattle and San Francisco), scientific R&D services (Boston, Raleigh-Durham, and San Francisco), and travel arrangements and reservation services (Las Vegas, which, not surprisingly, also has a significant concentration of “other amusement, gambling, and other recreation activities”). Although not reported in the Table, travel arrangements and reservation services, which are very similar in nature to call center operations, are also concentrated in some small cities in the upper Great Plains like Minot, North Dakota, and Aberdeen, South Dakota.

We can use the geographic concentration of production to distinguish between service activities that are tradable and those that require face-to-face interaction and are thus less likely to be traded. Again, the idea is that when something, whether a good or a service, is traded, its production can be concentrated in a particular region to take advantage of any economies in production. As a result, most regions will not support local production of the good or service, while one or a few will devote a disproportionate share of their productive activity to the good or service and then trade it.<sup>6</sup> Jensen (2011) uses the geographic concentration of a service within the United States as an indicator that the service is traded within the United States and thus potentially tradable internationally.

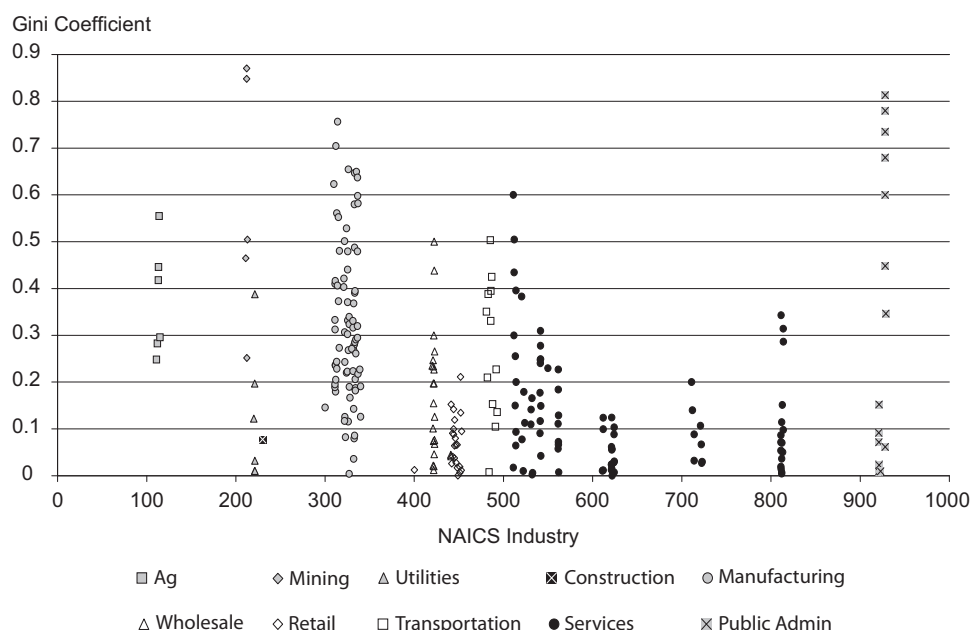
## **B. Tradable Industries**

Figure 6, from Jensen and Kletzer (2006), plots the Gini coefficients from the decennial census data for all industries by their three-digit NAICS codes. The resulting pattern is generally consistent with our expectation that industries known to be tradable will be geographically concentrated. For example, industries in the goods-producing sectors (agriculture, mining, and manufacturing) are typically in the top two Gini classes. Only 5 of the 92 industries in these sectors are in class 1: cement and concrete, machine shops, miscellaneous manufacturing, structural metals and tanks, and printing and related activities. All of these industries seem to be nontraded either because of a high weight-to-value ratio (such as cement and concrete) or because they include a range of potentially dissimilar activities (miscellaneous manufacturing). Most agriculture, mining, and manufacturing products are considered tradable; so, as a first approximation, defining only the lowest geographical concentration category (class 1) as nontradable seems appropriate for these sectors.

Although manufacturing industries tend to be more geographically concentrated than industries in the service sector, many service industries also exhibit levels of concentration consistent with them being traded within the United States. In addition, these same industries conform to our expectations about what service activities might be tradable. For example, software publishing, sound recording, motion picture production, and securities and commodities trading all exhibit high geographic concentration. By contrast, retail banking and videotape rental exhibit low geographic concentration, again consistent with what one would expect.

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<sup>6</sup> The relationship between the geographical concentration of production and trade, particularly exports, has a long tradition in both economic geography (where the measure used is the location quotient) and trade analysis (where the measure used is revealed comparative advantage). The measure of economic concentration used here is different from both these measures, but all the measures have a similar flavor in that they compare the share of production (or exports) in a particular region to an “expected” baseline.

**Figure 6: Geographic Concentration of Industries**

Source: Jensen and Kletzer (2006).

Within the information sector, the industries with the lowest Ginis are newspaper publishers, motion picture theaters except drive-ins, television broadcasting, radio stations, and wired telecommunications carriers. These all tend to rely heavily on local inputs or require a physical presence to provide the service. The information industries with the highest Ginis are record production, music publishers, cable and other subscription programming, integrated record production and distribution, and “other motion picture and video industries.”

Within professional, scientific, and technical services, some of the low-Gini industries are portrait photography studios and veterinary services. High-Gini industries in this group include payroll services and R&D in the social sciences and humanities. These results are also consistent with our expectations about the ability to provide these services over distances. Industries within the educational, health service, and “other services (except public administration)” sectors tend to have low Gini coefficients, suggesting low tradability.

As another check on the usefulness of geographic concentration in identifying tradable activities, Jensen (2011) reports, for 473 six-digit NAICS manufacturing industries, the correlation between the locational Gini coefficient and the exports-to-sales ratio and that between the Gini and the share of establishments that export. The correlations are strong, providing further evidence that geographic concentration is a useful proxy for tradability.

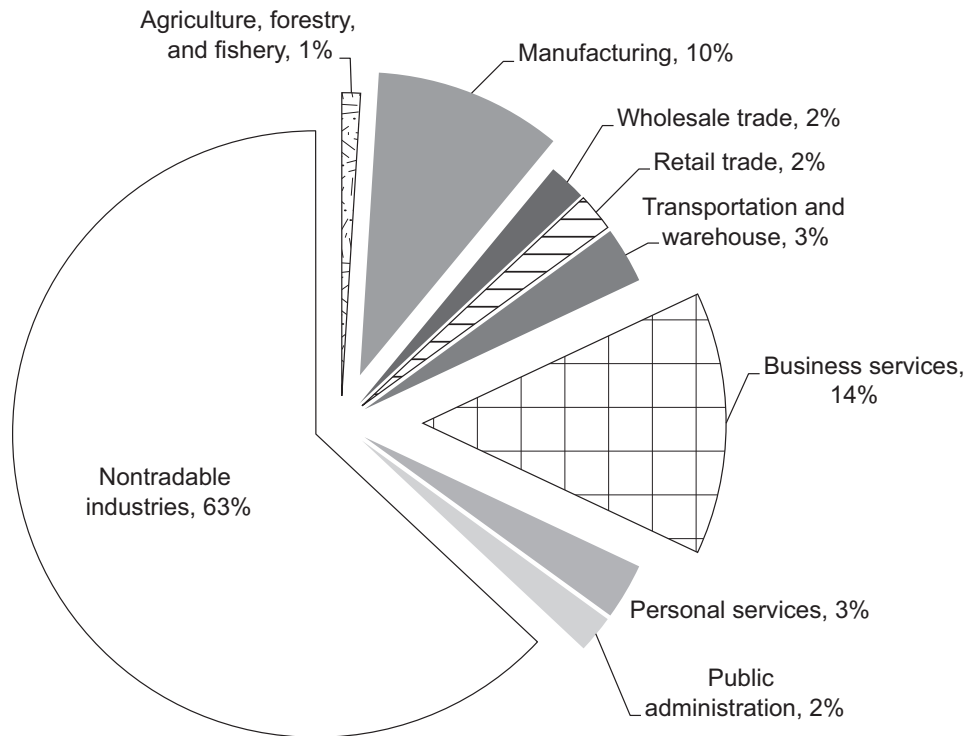
For a subset of business service industries, those in NAICS sectors 51, 54, and 56, similar export information is available. Jensen (2011) reports the same correlations for these industries as for the manufacturing industries above. Again the correlations are very strong.

Again, these results suggest that a number of service industries are tradable within the United States; international trade seems technologically feasible.

### C. How Many Workers are Employed in Tradable Services?

Figure 7, from Jensen (2011), shows that, in contrast to traditional characterizations of services as predominantly nontradable, a significant share of total employment is in tradable service industries. For example, more workers are in tradable industries in the business service sector alone (14% of all workers) than in tradable manufacturing industries (10%). True, some large service subsectors (such as education, health care, personal services, and public administration) have low shares of employment in tradable industries. However, because the business service sector is much larger than the manufacturing sector, the amount of business service activity that is technically feasible to trade internationally is quite large.

**Figure 7: Employment Shares for Tradable versus Nontradable Industries**



Source: Jensen (2011).

### D. Characteristics of Workers in Tradable Service Industries

The ability to identify which service activities are tradable and which are not is important because it will allow a better understanding of which services are likely to be traded, which services the United States is likely to import and which it is likely to export, and what the implications of increased trade in services are likely to be. Having more resolution on the types of activities that can be provided at a distance is necessary for determining the size and scope of tradable services.

Workers in tradable activities are indeed different from workers in nontradable activities, and the differences are striking (Table 3). Workers in tradable service activities are, on average, more educated (and apparently more skilled) than those in nontradable activities: The share of workers with a college degree in tradable services is double that in nontradable services (and

double that in manufacturing); the share of tradable service workers with advanced degrees is also double that in these other sectors. Moreover, workers in tradable activities have significantly (more than 30%) higher earnings, on average, than workers in nontradable activities. Jensen (2011) reports this qualitative finding holds not only in the aggregate, but also across similar industries within the same sector and across detailed occupations within major occupational groups, although the exact numbers differ. The earnings differences persist even after controlling for detailed worker characteristics that typically explain such differences. These differences will have important implications for whether increased trade in services will have an adverse impact on the US economy or on US workers—a topic taken up in the next chapter.

**Table 3: Worker Characteristics for Select Industries**

	<b>Nontradable industry</b>	<b>Tradable industry</b>
<b><i>Manufacturing (NAICS 30s)</i></b>		
Number of workers	2,235,432	12,994,490
Average earnings	\$ 44,014	\$ 49,952
Share with bachelor's degree	16%	24%
Share with advanced degree	3%	7%
Share in tradable occupations	26%	34%
<b><i>Professional Services (NAICS 50s)</i></b>		
Number of workers	8,038,246	18,430,199
Average earnings	\$ 42,226	\$ 66,454
Share with bachelor's degree	29%	50%
Share with advanced degree	7%	17%
Share in tradable occupations	31%	60%

NAICS = North American Industrial Classification System.  
Source: Jensen (2011).

#### **IV. GAINS FROM TRADE AND THE ROLE OF RELATIVE PRICES**

Traditional gains from trade come through specialization according to comparative advantage. Intuitively, a key signal of the possibility for mutually beneficial trade is differences in relative prices. If we were to think of the world in a simple two-good, two-country set up (with the United States/European Union as one country and developing Asia as the other country, and the two goods being manufacturing and business services), we would want to compare the relative prices between manufacturing goods and business services.

The data presented above showed that developing Asia, particularly the large countries in developing Asia, has smaller business service sectors than the United States or the United Kingdom and generally lower labor productivity in services than the OECD. This is suggestive evidence, but it makes sense to try to push the data a bit harder and see whether we can identify proxies for relative prices. Because services price data have a range of limitations and issues, I focus instead on wages paid in the different sectors as a proxy for relative prices in the sectors. This is admittedly imperfect, but given the severe data limitations, it seems to be the best we can do. Below, I will present more detailed information on the share of employment in business services for India and PRC and present limited information on how wages compare



across sectors in the two countries. Last, I will compare these proxies for relative prices to similar data for the US.

### **A. Detailed Look at Employment Shares and Relative Wages for PRC**

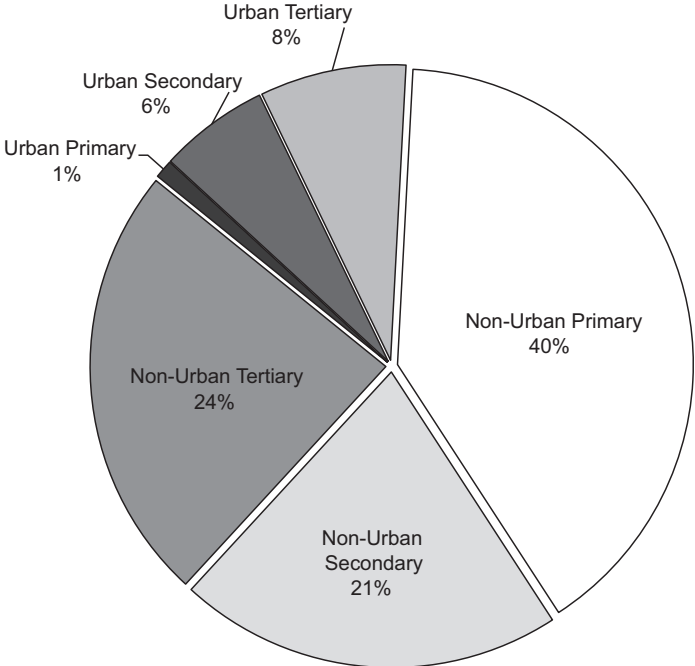
I focus on PRC because it is one of the most populous developing Asian countries; it is growing rapidly and an important global market. In addition, some more detailed information on sectoral employment and payroll is available for PRC. While the data are not as rich as that available for the United States, there appears to be enough detail to draw broad conclusions regarding the prospects and potential benefits from trade in services between developing Asia and the developed economies. (For related information on India, see Gonzales, Jensen, Kim, and Nordhas 2012.)

One shortcoming of the Chinese data is that detailed industry data are only available for “urban” PRC. “Urban” PRC has a labor force of about 120 million people, so it is roughly the same size as the US labor force. While it is big and globally important (and thus worth examining), urban PRC is not representative of PRC overall. Figure 8 shows the composition of the labor force for all of PRC, showing separately the share of total employment by sector and by urban/non-urban. Non-urban PRC’s biggest sector is the primary sector (agriculture and mining), accounting for 40% of PRC’s total labor force. In contrast, the primary sector only accounts for about 8% of urban PRC’s labor force. Urban PRC is not representative of PRC overall.

Figure 9 provides more detailed sectoral breakdown of the labor force in urban PRC. The share of the urban labor force in PRC accounted for by business services is about 10%. This is less than half the share in the United States or the United Kingdom. The PRC overall has an even lower share of employment in business services, particularly if one assumes that non-urban tertiary services are unlikely to be “business” services.

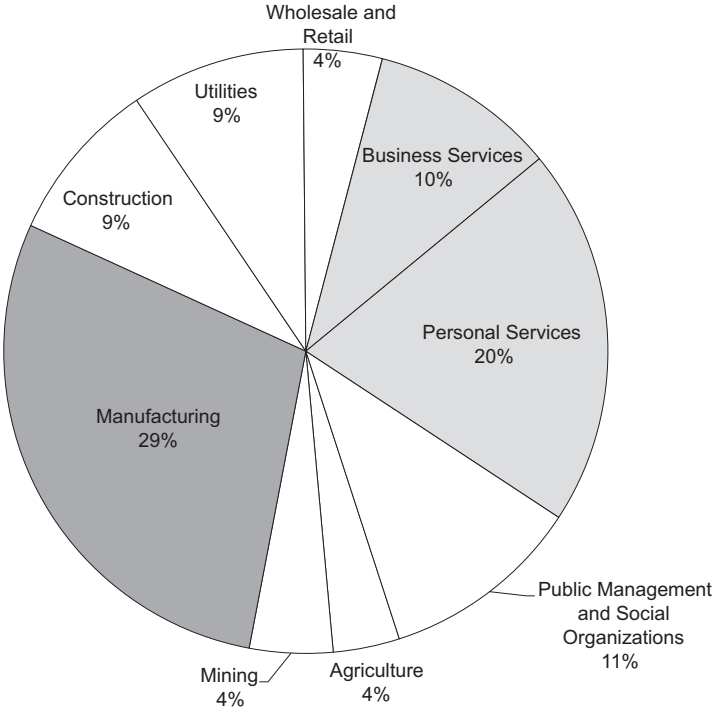
Relative wages for urban business service workers are significantly higher than urban manufacturing workers—about 77%. In contrast, US business service wages are only 22% higher than manufacturing wages. Given that manufacturing wages in non-urban PRC are probably lower than manufacturing wages in urban PRC, the difference in relative prices is likely understated. Further, if we examine the categories that are most likely to contain tradable business services, the wage differentials are even greater. Thus, the 77% to 22% differential is likely to understate the true relative price differences.

**Figure 8: Employment by Sector in the People’s Republic of China, 2008**



Source: People’s Republic of China Statistical Yearbook, 2008.

**Figure 9: Employment in Urban Areas in the People’s Republic of China by Sector, 2008**

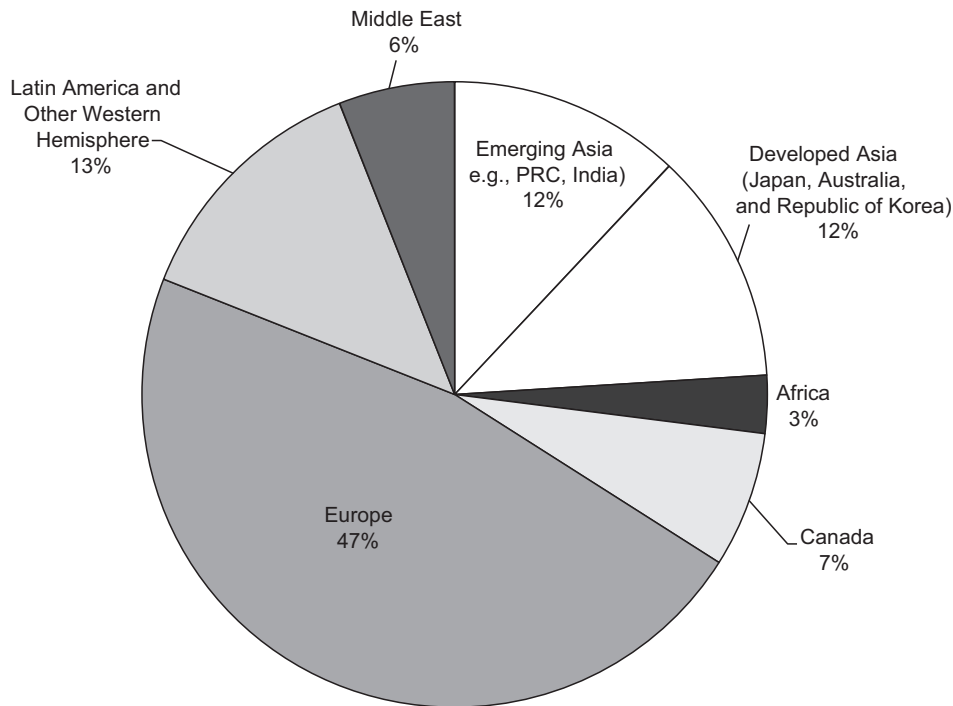


Source: People’s Republic of China Statistical Yearbook, 2008.

## B. Services Imports in Developing Asia

Drawing on other work from the ADB-PIIE project (see for example Noland, Park, and Estrada 2012), services imports do not appear to account for a larger share of imports (or GDP) than in the United States or the United Kingdom. This might be considered unexpected, given the persistent differences in skill abundance across the countries. As discussed above, developing Asia has relatively small business service sectors. Business services provide key intermediate inputs for many sectors in an economy. This suggests that developing Asia should be importing more services relative to GDP than developed economies—but this does not appear to be the case. Indeed, in looking at the destinations of US service exports, most are delivered to customers in the developed world. See Figure 10 which shows that about two-thirds of US business, professional, and technical service exports go to the developed world.

**Figure 10: Destinations of Business, Professional, and Technical Services Exports in the United States**



PRC = People's Republic of China.  
Source: Bureau of Economic Analysis.

## V. WHY LOWER SERVICE IMPORTS IN (OR EXPORTS TO) DEVELOPING ASIA?

Given the apparent comparative advantage in business services production and the lower relative prices for business services in the developed world and the importance of business services as intermediate inputs to many economic activities, it seems that developing Asia should be importing more business services from the developed world. This section explores one possible source of the lower service imports—policy impediments to services trade.

## A. Impediments to Trade in Services

The variety of service activities, the intangible nature of some services, and the sometimes complex interactions between producers and consumers in service delivery make identifying and quantifying impediments to trade in services quite difficult.<sup>7</sup> In addition, because service transactions are not subject to tariffs to the same extent as traded goods, no tariff schedules exist to use as a measure of impediments to service trade. Instead, the barriers to service trade are more diffuse and sometimes more subtle than those for merchandise trade.

There are legitimate reasons for some of the restrictions that countries impose on service trade. An important one is consumer protection. Many services, particularly the types of business services on which this study focuses, present important information asymmetries between producers and consumers. For example, consumers often find it difficult to judge the quality of the service being provided by a lawyer or a doctor. Lawyers know the law, and doctors know medicine, far better than the average consumer—that is precisely why consumers consult them. For activities where these information asymmetries are important, countries have developed regulations to try to mitigate the problems that they can cause.

Education and licensing requirements are examples of this type of regulation. Mattoo and Mishra (2008) describe the process of obtaining a license in a variety of professions within the United States. Although this process tends to be more open in the United States than in many other countries, it is still time consuming, and the requirements vary because licensing is typically mandated at the state rather than the federal level. Thus, there are state medical boards, state boards of architecture, state engineering boards, state accounting boards, state bars, and so on.

In general, the process of obtaining a license involves several steps. A typical first step is verification of educational credentials, training, and experience. Since university and training programs in some countries are not formally accredited, verification can be time consuming and unpredictable. Sometimes remedial training is required.

The next step is often a professional examination, which may duplicate examinations taken in the applicant's home country. There are often other requirements. Mattoo and Mishra report, for example, that several US states require accountants to be residents of the state as a condition for licensing. This, of course, discriminates not only against foreign professionals but also against out-of-state US professionals. Work experience in the profession may also be required. In medicine, for example, a foreign medical graduate on a J1 visa must work for three years in an underserved area in order to become licensed in the United States.

Frequently, states have different requirements for those who have qualified from within the state, from other states, and from foreign countries. As Mattoo and Mishra report,

*For example California requires four years of experience for licensure if an engineer is educated from a non-accredited program, whereas Pennsylvania requires a minimum of 12 years of experience. Similarly, international medical graduates (IMGs) are required to complete 3 years of postgraduate training in states such as Alaska, Colorado, Delaware, Washington DC, and Missouri whereas the requirement is only 2 years of post graduate training in states such*

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<sup>7</sup> The OECD currently has an effort to develop a Services Trade Restrictiveness Index. See the OECD's website for more information. This section draws on these efforts.

*as California, Florida, and Illinois. Architecture is an exception in that it has a centralized and strong national body, the National Council for Architectural Registration Boards (NCARB), which works with State Boards to establish qualification, registration and licensing policies.*

Despite this heterogeneity in licensing requirements across states, the United States has relatively low impediments to service trade. Other countries impose licensing and accreditation procedures and requirements that make it more difficult for foreign professionals to practice in their country.

## **B. Classifying Impediments to Services Trade**

An exhaustive list of impediments to service trade would be beyond the scope of this study. However, it is possible to provide a flavor of the types and range of these impediments. Several groups have made concerted efforts to develop measures of impediments to service trade. For example, in the late 1990s and early 2000s, the Australia Productivity Commission produced a number of studies that constructed indices of these impediments across a variety of countries (see Findlay and Warren 2000). The following is a list of some of the most significant restrictions to professional service trade from one of those studies:

- Requirements on the form of establishment
- Foreign partnership restrictions
- Ownership and investment restrictions
- Nationality requirements
- Residency and local presence requirements
- Licensing and accreditation of foreign professionals
- Limitations on the scope of activities
- Multi-disciplinary practices restrictions
- Fee and advertising restrictions

Besides these various types of regulation, service firms can face other forms of impediments. Mattoo and Mishra (2008) note that “*quotas and fiscal discrimination*, in the form of restrictive visa regimes, prohibitions, and economic needs tests on foreign providers, as well as discriminatory treatment in taxes and government procurement” are possible additional barriers. Discriminatory government procurement practices are a potentially important impediment and are likely to become even more important.

## **C. Quantifying Impediments to Services Trade**

An ongoing World Bank project, described in Gootiiz and Mattoo (2009) and Borchert, Gootiiz, and Mattoo (2011), seeks to measure impediments to trade in services in countries around the world. The project collects survey information on actual policies that impede service trade. To date, the project has collected comparable information from 32 developing and transition economies and 24 developed countries on such policies.

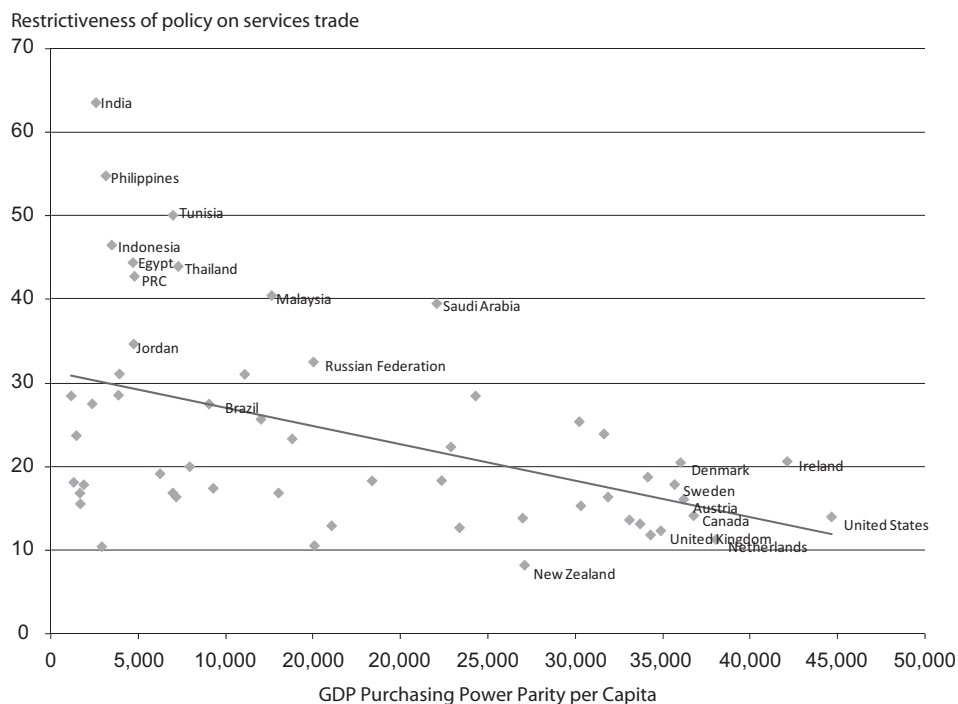
The sectors included in the project are financial services (retail banking, life and automobile insurance, and reinsurance), telecommunications (fixed and mobile), retail distribution, transportation (air passenger, road and rail freight, maritime international shipping, and maritime auxiliary services), and selected professional services. In each sector the project covers the most relevant modes of supplying the service: cross-border trade (in financial,

transportation, and professional services), commercial presence or foreign direct investment (in all sectors), and the presence of individuals (in professional services).

For the 32 developing and transition countries, surveys were sent to local law firms familiar with the policy regime in the various sectors. For the 24 developed countries, comparable policy information was collected from various publicly available sources, including documents detailing countries' commitments under the General Agreement on Trade in Services and sector-specific databases, and summarized for each country. The survey information and the policy summaries were confirmed by government trade officials during 2008.

The World Bank researchers used the data to calculate an index of the overall restrictiveness of service trade policies for each country. Figure 11, reproduced from Gootiiz and Mattoo (2009), plots this restrictiveness index against GDP per capita for a large sample of countries. The resulting scatterplot shows a fairly strong negative correlation: Countries with higher income per capita tend to have less restrictive barriers to service trade, whereas some countries with low incomes per capita have some of the highest levels of service trade restrictions. But not all. Some relatively poor countries like Cambodia, Ghana, Mongolia, Nigeria, and Senegal have relatively low levels of service trade restrictions—possibly the result of reform programs under World Bank and International Monetary Fund auspices, as well as aspirations toward World Trade Organization accession. Gootiiz and Mattoo note that some of the most restrictive policies are in large or fast-growing economies like PRC, Egypt, India, Indonesia, Malaysia, the Philippines, Saudi Arabia, and Thailand.

**Figure 11: Trade Restrictiveness and Per Capita Income, 2006**



PRC = People's Republic of China.

Source: Gootiiz and Mattoo (2009).

#### D. Opportunities for Growth—Infrastructure and Higher Value Added Manufacturing

Francois and Hoekman (2010) review a range of studies that demonstrate that service trade liberalization increases productivity in the manufacturing sector. Increased service trade would improve the level of service in telecommunications, finance, and other business services in developing countries for businesses and consumers. These types of business services are important intermediate inputs into goods production and are the types of inputs that distinguish commodity products from higher value-added manufactured goods. For developing Asia to move up the value chain in manufactured goods, developing Asia will need access to efficient, leading edge business services in engineering, design, development, testing, marketing, advertising, logistics, and distribution. Given the relative small size of the business service sector in developing Asia, it seems unlikely that developing Asia can be self-sufficient in these activities in the near term. Opening to imports of business services is an obvious way to provide access to the low-cost, leading edge services required by the goods-producing sector.

A specific example of where business services are important inputs to faster growth is in infrastructure development. A huge infrastructure boom is already underway in the fast-growing countries in developing Asia. Some estimate that over \$40 trillion could be spent on infrastructure of all types worldwide over the next 25 years, most of it in the developing world.<sup>8</sup> Developing Asia needs roads, harbors, airports, energy infrastructure, water and sewer systems, telecommunications infrastructure, and residential and commercial construction on an unprecedented scale. This is another area where developing Asia could import the skills and expertise required to develop cost-efficient, state-of-the-art infrastructure. This type of infrastructure is a key input into moving up the value chain in manufacturing. This type of infrastructure is also a key input into rising living standards. The potential for a win-win relationship between fast-growing countries in developing Asia and business service providers in the traditional developed economies is large. Reducing policy impediments in the service sector in developing Asia is a necessary condition to capitalize on this.

### VI. POLICY RECOMMENDATIONS

1. **Developing Asia should reduce policy impediments to business services trade.** Developing Asia has relatively small and expensive business service sectors. While increasing educational attainment in developing Asia is likely to resolve this issue over the long term, in the short run it makes sense to import business services from the developing world and take advantage of the gains to trade in a large and important sector. Developing Asia has benefited significantly from liberalizing goods trade—the same potential exists in business services.
2. **Developing Asia should continue to make education a priority.** The long run fix to small and expensive business service sector is to increase the skill abundance of Asia. A number of countries have made dramatic progress in this dimension and are likely to reap the rewards from this investment. More countries need to aggressively pursue increased educational attainment.

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<sup>8</sup> Nicolas Timmins, “In the Rush for the New, Don’t Forget the Old,” *Financial Times*, 2010, and Leonora Walters, “Build an Income with Infrastructure,” *Investors Chronicle*, 2010.

3. **All countries should collect and publish more detailed information on the service sector and service sector trade.** The service sector is a large, growing, and important source of economic growth. To understand what is happening in the service sector requires a much richer view than is currently possible. This seems like a natural place for the ADB to contribute.



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### **Overlooked Opportunity: Tradable Business Services, Developing Asia, and Growth**

This paper argues that developing Asia is overlooking an opportunity for increased growth and development through trade in business services. The region would benefit from liberalizing services trade as it has benefited from liberalizing goods trade.

### **About the Asian Development Bank**

ADB's vision is an Asia and Pacific region free of poverty. Its mission is to help its developing member countries reduce poverty and improve the quality of life of their people. Despite the region's many successes, it remains home to two-thirds of the world's poor: 1.7 billion people who live on less than \$2 a day, with 828 million struggling on less than \$1.25 a day. ADB is committed to reducing poverty through inclusive economic growth, environmentally sustainable growth, and regional integration.

Based in Manila, ADB is owned by 67 members, including 48 from the region. Its main instruments for helping its developing member countries are policy dialogue, loans, equity investments, guarantees, grants, and technical assistance.

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