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Gerald R. Ford School of Public Policy  
The University of Michigan  
Ann Arbor, Michigan 48109-1220

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**The Place of Services in the World Economy**

**Robert M. Stern**

University of Michigan

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## **THE PLACE OF SERVICES IN THE WORLD ECONOMY**

**Robert M. Stern, University of Michigan**

### **Abstract**

This paper emphasizes the key roles that services play domestically and internationally in terms of accounting for rising shares of domestic output and employment as well as cross-border trade and foreign direct investment that provide enhanced export opportunities and lower-cost imports. Services are commonly subject to a variety of regulatory policies, such that liberalization requires both the removal of explicit barriers combined with regulatory reform. There is substantial evidence indicating that services liberalization and regulatory reform may result in increased economic growth and greater efficiency in the use of labor and capital, increased product innovation, and increased consumer welfare.

The role of services is put in context by a review of selected economic data on the trade and macroeconomic structure and performance especially of the five Andean economies – Bolivia, Colombia, Ecuador, Peru, and Venezuela. The implications of regulatory reform and services liberalization are analyzed in some depth, after which there is a focus on methods of measurement of international services barriers and quantification of the economic significance of reducing or removing these barriers. The potential economic benefits of services liberalization are illustrated computationally. The paper concludes with a discussion of priorities for multilateral services negotiations.

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Address correspondence to:

Robert M. Stern  
Department of Economics  
University of Michigan  
Ann Arbor, MI 48109-1220

Tel. 734-764-2373

Fax 734-763-9181

E-mail [rmstern@umich.edu](mailto:rmstern@umich.edu)

# **THE PLACE OF SERVICES IN THE WORLD ECONOMY\***

**Robert M. Stern**  
**University of Michigan**

## **I. Introduction**

In recent decades, attention has become increasingly focused on the key roles that services fulfill domestically and internationally. It is widely recognized that services account for a significant and rising share of domestic output and employment, and that cross-border trade and foreign direct investment in services provide enhanced export opportunities for services suppliers and lower costs for imported services. While it is sometimes thought that services rely primarily on unskilled workers, this is by no means the case since there are many services sectors in which there is substantial employment of highly skilled workers.

Traditionally, services sectors have been subjected to a variety of domestic restraints that have limited entry of new services providers and discriminated against services provided by foreign producers. While many countries have unilaterally undertaken regulatory reform in many services sectors, it was not until the Uruguay Round negotiations (1986-93) under the auspices of the General Agreement on Tariffs and Trade (GATT) that services liberalization was embodied in the multilateral negotiations with the signing of the General Agreement on Trade in Services (GATS). Many countries indicated their willingness to identify the services sectors that would be subject to liberalization, but actual negotiations were to be carried out at a later time. While there have been international services negotiations completed since the conclusion of the Uruguay Round covering financial services and telecommunications, comprehensive services liberalization is being addressed in the ongoing Doha Development Agenda (DDA) negotiations that were launched in 2002 and are ongoing.

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Services liberalization and regulatory reform are of great importance because of the effects that the measures may have in increasing the levels and rates of growth of gross domestic product (GDP) and increasing employment. There will also be improvements in economic efficiency as labor and capital are reallocated and firms respond to lower input prices and changing competitive conditions that will serve to reinforce the comparative advantage of different sectors. Consumer welfare will be increased with reductions in the prices of goods and services and the availability of greater product variety. In the longer run, there may be increased expenditures on research and development and innovations in production and the introduction of new products coupled with the fruits of greater capital formation from increased domestic and international investment.

In order to place these introductory remarks in context, Section II that follows reviews some pertinent economic data on trade in goods and services globally and for the five Andean economies – Bolivia, Colombia, Ecuador, Peru, and Venezuela – together with some data on their macroeconomic structures and performance. Section III provides more analytical depth to the implications of regulatory reform and liberalization of services, and Section IV focuses on methods of measurement of international services barriers and quantifying the economic significance of reducing or removing these barriers. The potential economic benefits of services liberalization are illustrated computationally thereafter in Section V. Section VI concludes with a discussion of priorities for multilateral services negotiations.

## **II. Some Pertinent Economic Data**

### **Modes of Services Transactions**

The most distinguishing characteristic of services transactions is that their production and consumption occur simultaneously, although they can be provided in a variety of types or modes. There are four modes of services that can be distinguished. These are

- Mode 1 – services that are traded internationally across borders
- Mode 2 – services that require the consumer to be in the location of the producer
- Mode 3 – services that require commercial presence in the form of foreign direct investment

- Mode 4 – services that require the temporary cross-border movement of workers

To clarify further, Mode 1 refers to “separated” services such as telecommunications, which are traded internationally across borders in a manner similar to cross-border trade in goods. Here, foreign suppliers of a service provide it to domestic buyers through international means of communication and perhaps transportation, with a unit of the service itself often unobservable as it crosses national borders. A French telecoms company, for example, may provide telephone services to a customer in Colombia, in competition with a Colombian-based provider. If a trade barrier exists in this case, it might consist of Colombian restrictions on the French firm’s access to phone lines in Colombia, discriminatory taxes on its operations, or regulations on the ways that Colombian consumers are allowed to access the foreign firm’s services.

Mode 2 of services trade refers to services that require the consumer to be in the location of the producer, as in the cases of tourism and education. Here again, the service provided is likely to be differentiated by the location or identity of the provider.

Mode 3 of international services provision is arguably the most general and the most important: provision through a commercial presence that is the result of foreign direct investment (FDI). Almost any service can be provided by firms from one country to consumers in another if the firms are allowed to establish a physical presence there. This is true even of tourism – think of Euro-Disney for example.

The final mode of supply, Mode 4, refers to the temporary cross-border movement of workers. Examples are the movement of computer programmers, engineers, management personnel, and lesser skilled construction workers who are granted temporary visas to work in a host country. Most movement that is actually permitted consists of workers within industries that produce traded goods or that produce services that are primarily thought of as traded through other modes. Thus we do not think of many industries as producing services that are primarily traded through Mode 4. On the other hand, labor itself is a service that could be traded in this way, and occasionally it has been, in the form of guest-worker programs and the like.

An indication of the value of the four modes of services transactions is provided in Table 1. It should be noted that the data for Modes 1, 2, and 4 are based on balance-of-payments accounts and Mode 3 on the gross output of foreign-owned affiliates. The data are thus not really comparable, although they nonetheless give some indication of the relative importance of the various modes. The relatively small proportion accounted for by compensation of employees may reflect the significant barriers that restrict Mode 4 movement of workers.

### **Andean Economies Data**

Aggregate data on exports and imports of merchandise and (cross-border) commercial services for the five Andean economies, Other Latin America, the United States, European Union (15), Japan, and Rest of World are indicated in Tables 2 and 3. These data are measured in current prices for 1980, 1990, 1995, and 2003. For the Andean economies combined, aggregate exports of merchandise and commercial services increased in nominal terms by far less than the increases noted for the other countries and regions. Aggregate services exports for the Andean economies were about 10% in value compared to their aggregate merchandise exports in 2003 and 27% for imports. Globally, it can be seen that world services exports increased in nominal terms nearly 5-fold from 1980-2003 compared to under 4-fold for merchandise exports. It is also evident that the Andean economies account for a relatively small percentage of total world exports of merchandise and services, 0.7% and 0.3%, respectively. Tables 4-6 contain data on the current values of trade in transportation services, travel services, and other commercial services for the selected years. It can be seen that the Andean economies were net importers of transportation services and other commercial services and net exporters of travel services.

Data on total gross domestic product (GDP) in local currencies at constant prices and a breakdown by major producing sectors are noted in Table 7 for 1994 and 2003. Total GDP increased in all of the Andean countries except for Venezuela. Real GDP per capita increased in Bolivia and Peru, changed marginally in Colombia and Ecuador, and declined in Venezuela. The share of agriculture in GDP fell noticeably in Ecuador and Venezuela. The share of services exceeded 50% of GDP, with the

most noteworthy increases in Colombia and Ecuador. The level of and changes in the population and labor force are given in Table 8. All of the Andean countries noted, except Venezuela, have sizable proportions of rural population.

In table 9, there is an indication of the total stock of inward foreign direct investment (FDI) in the Andean economies for 2003. Venezuela had by far the largest inward stock. Some information is also given for the stock of U.S. FDI in total and broken down by major sector. Ecuador, Peru, and Venezuela have considerable U.S. FDI in mining and utilities. The proportions of U.S. FDI in services were: Colombia, 46%; Ecuador, 34%; Peru, 44%; and Venezuela, 30%. U.S. FDI data were not separately available for Bolivia.

The data presented in the foregoing tables are designed to provide a broad overview of the characteristics of the trade of the Andean economies and aspects of their macroeconomic, demographic, and sectoral structure. To obtain a more complete picture of these economies would require disaggregated data, but space constraints preclude this. We turn next then to focus explicitly on services issues.

### **III. Regulatory Reform and Liberalization of Services**

Mention has already been made of the rationale for undertaking regulatory reform and liberalization of services. In this connection, Mattoo (2003, pp. 3-6) has called attention to the benefits involved:

“There are strong intuitive reasons to believe that services trade liberalization, implemented in the context of a broader services reform program, has profound effects on overall economic performance....

- *Dynamic benefits*

Certain services industries clearly possess growth generating characteristics, given the central role that the financial services play in the transformation of savings to investment, telecommunications in the diffusion of knowledge, transport to a country's ability to participate in global trade, education and health services in building up the stock of human capital, and business services in reducing transactions costs. Furthermore, barriers to entry in a number of services sectors, ranging from telecommunications to professional services, are maintained not only against foreign suppliers but also against

new domestic and foreign suppliers. Greater foreign factor participation and increased competition together imply a larger scale of activity, and hence greater scope for generating the special growth-enhancing effects. Even without scale effects, the import of foreign factors that characterizes services sector liberalization could still have positive effects because they are likely to bring technology with them. If greater technology transfer accompanies services liberalization – either embodied in foreign direct investment or disembodied – the growth effect will be stronger. ....

- *Impact on comparative advantage*

Reform of services policy has an impact not only on overall economic activity but also on its composition. The profound effect transport costs have on trade and the distribution of economic activity across regions is increasingly well-documented. ...international variations in communications costs...have a significant influence on trade patterns...and can shift a country's comparative advantage towards more sophisticated communication-intensive differentiated goods and away from more standardized primary goods.

These benefits cannot be realized by a mechanical opening up of services markets and the gains from liberalization can be undermined by a flawed reform program.

Most people would today agree on certain conditions for successful reform. We know that in services ranging from telecommunications to transport larger benefits come from introducing meaningful competition rather than simply allowing a change of ownership from public to private or from national to foreign hands. For example, if privatization of state monopolies to private owners (sometimes foreigners) is conducted without concern to creating conditions of competition, the result may be merely transfers of monopoly rents to private owners. Similarly, if increased entry into financial sectors is not accompanied by adequate prudential supervision and greater competition, the result may be insider lending and poor investment decisions. Also, if policies to ensure universal service are not put into place, liberalization need not improve access to essential services for the poor. Managing reforms of services markets therefore requires integrating trade opening with a careful combination of competition and regulation.

[Further,] ... impact of reform depends both on the combination and sequencing of policies. ....

But even now there is a lot that we do not know...

Consider several questions that policy makers and negotiators must address. In financial services, how far should trade and investment liberalization be conditioned on strengthened prudential regulation? In basic telecommunications and other services subject to economies of scale, is the conceptual case for limiting the number of suppliers invalidated by experience? How much is to be gained by eliminating all barriers to entry when some competition has already been allowed? How great are the gains from eliminating all barriers to foreign investment when some is already permitted? How large are the adjustment costs associated with different modes of supply? In virtually every service sector, would liberalization improve access to essential services for the poor, and if not, what must be done?"

It should be clear from the foregoing excerpts that regulatory reform combined with the liberalization of barriers in services industries may generate important dynamic growth benefits and improvements in comparative advantage in the production and trade of countries' goods and services industries. There are considerable gains in economic welfare that may result therefore if regulatory reform and liberalization of services barriers can be carried out. In order to realize these gains, a prerequisite is to assemble information about existing services barriers and to devise methodologies to estimate what the economic effects would be if the barriers were reduced or eliminated altogether. We turn next accordingly to discuss issues of the measurement and modeling of services barriers.

#### **IV. Measurement and Modeling of the Economic Effects of Services Barriers**

For all of the modes of services transactions, the primary objective of empirical measurement is to deduce some sort of tariff equivalent of the barrier to trade in particular services. Since direct price comparisons seldom serve that purpose, however, researchers have pursued other means of inferring the presence and size of barriers to trade. Some of these have been quite direct: they simply ask governments or participants in markets what barriers they impose or face. The answers are usually only qualitative, indicating the presence or absence of a particular type of barrier, but not its quantitative size or effect. Such qualitative information takes on a quantitative dimension, however, when it is tabulated by sector, perhaps with subjective weights to indicate severity. The result is a set of "frequency measures" of barriers to trade, recording what the barriers are and where, and perhaps also the fraction of trade within a sector or country that is subject to them. Frequency measures do not directly imply anything like the tariff equivalents of trade barriers, but in order to use them for quantitative analysis, analysts have often converted them to that form in rather ad hoc ways that will be indicated below.

Other, more indirect, measurements of trade barriers in service industries have also been used, alone or in combination with frequency measures. These may be divided into two types: measurements that use information about prices and/or costs and measurements that observe quantities of trade or production and attempt to infer how trade barriers have affected these quantities. In both cases, as will be

discussed, if one can also measure or assume an appropriate elasticity reflecting the response of quantity to price, a measured effect on either can be translated into an effect on the other. Thus both price and quantity measurements are also often converted into, and reported as, tariff equivalents.

Because service industries have numerous special features, both in the ways that they operate and in their amenability to measurement, empirical work is therefore essential to address the measurement of the various services barriers that impede international services transactions.

### **Characteristics of Services Barriers**

As noted by Hoekman and Primo Braga (1997, p. 288), border measures such as tariffs are generally difficult to apply to services because customs agents cannot readily observe services as they cross the border. It is also the case that many services are provided in the country of consumption rather than cross-border. Typically, therefore, services restrictions are designed in the form of government regulations applied to the different modes of services transactions.

Thus, for example, these regulations may affect the entry and operations of both domestic and foreign suppliers of services and in turn increase the price or the cost of the services involved. Services barriers are therefore more akin to non-tariff barriers (NTBs) than to tariffs, and their impact will depend on how the government regulation is designed and administered. In this connection, the Australian Productivity Commission distinguishes the government regulations of services along two dimensions, according to whether restrictions are:<sup>1</sup>

- “imposed on establishment or ongoing operations; and
- non-discriminatory (treat domestic and foreign service suppliers equally) or discriminatory (treat foreign service suppliers differently from (typically less favorably than) domestic suppliers).”

Existing regulations differ greatly across service industries and are often based on characteristics of the particular service being provided. This can be illustrated using the case of banking services based

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<sup>1</sup>For more details, see the website of the Australian Productivity Commission ([www.pc.gov.au/research/memoranda/servicesrestriction/index.html](http://www.pc.gov.au/research/memoranda/servicesrestriction/index.html)). See also Hoekman and Braga (1997, p. 288), who classify and provide examples of services barriers as follows: (1) quotas, local content, and prohibitions; (2) price-based instruments; (3) standards, licensing, and procurement; and (4) discriminatory access to distribution networks.

on a study by McGuire and Schuele (2000) done under the auspices of the Australian Productivity Commission. Table 10 lists groupings of restrictions that apply especially to Modes 3 and 4 of international banking services transactions. These restrictions relate to commercial presence and “other restrictions” applied to banking services, together with a brief indication of what these restrictions represent and how an index of them has been constructed.<sup>2</sup> As McGuire and Schuele note (p. 206): “The commercial presence grouping covers restrictions on licensing, direct investment, joint venture arrangements, and the permanent movement of people. The ‘other restrictions’ grouping covers restrictions on raising funds, lending funds, providing other lines of business (insurance and securities services), expanding banking outlets, the composition of the board of directors and the temporary movement of people.” An indication of the restrictiveness of these regulations is also provided in the table and will be discussed below.

Another perspective on the types of barriers affecting foreign direct investment (FDI) (Mode 3), in establishing a commercial presence in many sectors in host countries, is provided by Hardin and Holmes (1997). They define (p. 24) an FDI barrier as “...any government policy measure which distorts decisions about where to invest and in what form.” In considering ways of classifying FDI barriers, they note (pp. 33-34):

“The appropriate classification system may vary, depending on the purpose of the exercise. For example, if the purpose is to check and monitor compliance with some policy commitment, then the categories should reflect the key element of the commitment.... If the primary interest is instead the resource allocation implications of the barriers, some additional or different information may be useful.

Barriers to FDI may distort international patterns and modes of...trade. They may also distort allocation of capital between different economies, between foreign and domestic investment, between different sectors, and between portfolio and direct investment. ...the classification system...should highlight the key characteristics of the barriers that will determine their size and impact. Market access and national treatment are...relevant categories from a resource allocation perspective. ...national treatment is generally taken to refer to measures affecting firms after establishment. A...way to classify barriers is therefore...according to what aspect of the investment they most affect: establishment, ownership and control; or operations. In addition..., some further information may be

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<sup>2</sup> See the Productivity Commission website for detailed listings by country of the categories of domestic and foreign restrictions on establishment and ongoing operations for some selected services sectors, including: accountancy, architectural, and engineering services; banking; distribution; and maritime services.

useful...on distinctions...between direct versus indirect restrictions on foreign controlled firms; and rules versus case-by-case decisions.”<sup>3</sup>

The main types of FDI barriers that have been identified by UNCTAD (1996) are noted in Table 11. Further information on the barriers most commonly used to restrict FDI especially in the APEC economies is provided in Hardin and Holmes (1997, esp. pp. 37-40 and 45-55). As they note (p. 40), some common characteristics appear to be:<sup>4</sup>

“application of some form of screening or registration process involving various degrees of burden for the foreign investor; restrictions on the level or share of foreign ownership, particularly in some service sectors, and often in the context of privatisations; widespread use of case-by-case judgments, often based on national interest criteria; widespread use of restrictions on ownership and control (e.g., restrictions on board membership), particularly in sectors such as telecommunications, broadcasting, banking; and relatively limited use of performance requirements on input controls in services sectors.”

It is evident from the foregoing discussion that services barriers exist in a variety of forms, depending on the types of services involved, the country imposing the barriers, and the sectors to which the barriers are applied. To help further the understanding of the different services barriers, it would be useful if the available information by country and sector were organized according to the four modes of international services transactions and whether or not they are protectionist in intent. As already noted, these modes cover: cross-border services (Mode 1); consumption abroad (Mode 2); FDI (Mode 3); and the temporary movement of workers (Mode 4). Using this information, the next and difficult step is to devise methods of measurement of the various barriers and to integrate these measures within a framework designed to assess their economic effects.

### **Methods of Measurement of Services Barriers**

Measurements of trade barriers, in markets for both goods and services, can be either direct or indirect. Direct measurements start from the observation of an explicit policy or practice, such as an

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<sup>3</sup> Direct restrictions include limitations on the total size or share of investment in a sector and requirements on inputs used (e.g., local content). Indirect restrictions include net benefit or national interest criteria and limitations on membership of company boards. The distinction between rules and case-by-case decisions relates to issues of clarity in specification and transparency as compared to the exercise of administrative discretion.

<sup>4</sup> Hardin and Holmes (pp. 40-43) also provide information on investment incentives, which are widely used and for the most part are not subject to multilateral disciplines.

import quota or a regulation of a foreign provider of services, and then attempt in some fashion to measure its economic importance. Indirect measurements try instead to infer the existence of barriers using observed discrepancies between actual economic performance and what would be expected if trade were free. Direct measurements have the advantage that one knows what one is measuring, and the disadvantage that they can only include those barriers that are in fact explicit and recognized. Indirect measurements have the advantage that their quantitative importance is known, at least in the dimension used to identify them, but the disadvantage that they may incorporate unrecognized frictions other than the policy impediments that one seeks to identify.

With respect to the barriers applied in the case of trade in goods, direct measurements of the barriers typically take the form of inventories of identified trade restrictions, such as those compiled in the United Nations Conference on Trade and Development (UNCTAD) Trade Analysis and Information System (TRAINS).<sup>5</sup> Since barriers usually cover only some industries or products, a first step in quantifying them is often to measure the fraction of trade that they cover in different sectors and countries. These fractions may then be used directly in empirical work, even though they do not themselves say anything about how effective the barriers have been in restricting trade.<sup>6</sup> Indirect measurements, on the other hand, can be fairly straightforward, based either on the observed prices of goods before and after they cross an international border or on the quantities that cross it. For example, one can often infer both the presence of an import barrier and its effect on price by simply comparing the price of a good inside a country to that outside, since in the absence of any barrier one would expect competitive market forces to cause these prices to be the same. Indirect measurements based on quantities are more difficult to apply, however, since they depend on a theoretical benchmark for comparability that is likely to be much less certain.

For trade in services, direct measurements must be carefully done, since regulation in service industries is so widespread that merely to document its presence would not be informative. A common

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<sup>5</sup> TRAINS is available on-line at [www.unctad.org](http://www.unctad.org).

<sup>6</sup> In fact, they are somewhat perverse for this purpose, since the more restrictive is an NTB, the less will be the trade that it permits.

approach is therefore to complement the documentation of regulations by incorporating information about the restrictiveness of the regulations, and then use this information to construct an index of restrictiveness that can be compared across countries

Indirect measurements of restrictiveness are also possible with traded services, although it will usually be difficult to compare prices inside and outside a country. This is because many services are differentiated by location in a way that renders price comparisons meaningless for the most part. For example, the cost of providing telephone service to consumers on the Texas side of the U.S.-Mexican border need bear no particular relationship to the cost, for the same firm, of providing it across the border in Mexico, where wages are much lower but costs of infrastructure may be much higher. So even if trade in the service were completely unimpeded, we would not expect these prices to be the same. It may therefore not be possible to infer a trade barrier in either direction. Similar arguments can be made about most traded services.

Indirect measurements of barriers to trade in services are therefore less common than for trade in goods, although they do exist. As will be discussed below, there has been some success using the so-called gravity models as a benchmark for quantities of trade in services, and the results of these models have therefore been the basis for indirect measurement of barriers in the quantity dimension. Financial data have also been the basis for inferring barriers from differences in the markups of price over cost, as will also be discussed.

Because of the difficulty with indirect measurements of services barriers, there is a need for some other approach to quantifying the effects of barriers that have been identified. In this connection, indexes of restrictiveness can be constructed that are typically measured on a scale of zero to one. But since it cannot be determined by how much a barrier either raises price or reduces quantity, it may be possible to use econometric analysis to relate an index of restrictiveness to observed prices or quantities, thereby translating the measures of the presence of barriers into an estimate of their economic effect in particular services markets.

In what follows, then, I first discuss the construction of measures of the presence of barriers, commonly referred to as frequency-based measurements, and the use of these measurements to construct indexes of restrictiveness. This is followed by a discussion of how the effects on prices and quantities can be derived. I then turn to methods that attempt to infer the presence of services barriers indirectly, first from a gravity model of the quantities of trade, and second from financial data within service firms.

### ***Frequency Studies and Indexes of Restrictiveness***

Studies of frequency-based measures start by identifying the kinds of restriction that apply to a particular service industry or to services in general. For particular industries, this requires considerable industry-specific knowledge, since each industry has, at a minimum, its own terminology, and commonly also its own distinctive reasons for regulatory concern. Regulations often serve an ostensibly valid purpose – protecting health and safety, for example – and knowledge of the industry is necessary to distinguish such valid regulations from those that primarily offer protection. Thus, a frequency study is best carried out by an industry specialist, or it must draw upon documents that have been prepared by such specialists. Industry studies therefore typically build upon the documentation provided by industry trade groups, as for example the International Telecommunications Union in the case of telecoms, bilateral air service arrangements in the case of passenger air travel, or the TradePort website in the case of maritime services.

For broader studies of restrictions in services, covering multiple industries, some source must be found that incorporates such expertise across sectors. An early approach to doing this was in studies that used information that countries had submitted to the General Agreement on Trade in Services (GATS), to be used as the basis for commitments to be made for services liberalization in the Uruguay Round negotiations. Such measures are therefore not ideally suited for documenting trade barriers. Better information requires that someone deliberately collect the details of actual barriers and regulatory practices, as in the data collected by Asia Pacific Economic Cooperation (APEC) and used by Hardin and Holmes (1997). In all cases, the goal is not just to assemble a complete list of barriers, but also to know

the restrictiveness of these barriers in terms such as the numbers of firms or countries to which they apply and other characteristics. This latter information is then used to construct an Index of Restrictiveness. Typically, each barrier is assigned a score between zero and one, with a score of one being the most restrictive and a score of zero being the least restrictive. These scores are then averaged, using weights that are intended to reflect the relative importance of each type of barrier.

There are several ways in which the weights on different barriers in a restrictiveness index may be assigned. Most commonly, these reflect the judgments of knowledgeable investigators as to the importance of each type of barrier. This may well be the best approach if the investigator really is knowledgeable, as in the case when an index is being constructed for a specific, narrowly defined industry. An alternative that has been used by Nicoletti et al. (2000) and subsequently by Doove et al. (2001) is to use a statistical methodology to distinguish those barriers that vary most independently among their data, and then to apply the largest weights to them. This purely statistical methodology is not however an improvement on the use of judgmental weights.

A third approach is not to construct an index at all, but rather to use the scores or proxy measures for each barrier separately in an empirical analysis. The difficulty here is that these scores may be interrelated, so that their independent influence on any variable of interest may be impossible to ascertain using standard statistical methods. If this can be done, however, the advantage is that it allows for the fact that barriers may differ in their importance for different aspects of economic performance, and this approach allows these differences to become known. Ideally, one would prefer an approach that allows the weights in an index of restrictiveness to be estimated simultaneously with the importance of that index for a particular economic outcome. Thus the construction of the index would be interlinked with its use for estimating effects on prices and quantities.

To continue with the example of restriction categories and weights applied to banking services in the study by McGuire and Schuele (2000) noted in Table 10 above, these authors have assigned scores for different degrees of restriction, ranging between 0 (least restrictive) and 1 (most restrictive). The various categories are weighted judgmentally in terms of how great the costs involved are assumed to be with

respect to the effect on economic efficiency. Thus, it can be seen in Table 10 that restrictions on the licensing of banks are taken to be more burdensome than restrictions on the movement of people. Also, the scores are given separately for the restrictions applicable only to foreign banks and the “domestic” restrictions applicable to all banks. The differences between the foreign and domestic measures can then be interpreted as indicating the discrimination imposed on foreign banks. Finally, it will be noted that the foreign scores sum to a maximum of 1 and the domestic scores to a maximum of 0.808, because some of the restrictions noted apply only to foreign banks and not to domestic banks.

Based on detailed information available, the scores for banking restrictions in individual countries can be constructed. Using the category weights in Table 10, it is then possible to calculate “indexes of restrictiveness” of the foreign and domestic regulations by country. These indexes are depicted graphically for selected Asia-Pacific countries, South Africa, and Turkey in Figure 1 and for Western Hemisphere countries in Figure 2. India, Indonesia, Malaysia, and the Philippines can be seen to have relatively high foreign index scores, Korea, Singapore, Thailand, and Turkey have moderate foreign index scores, and Australia, Hong Kong, Japan, New Zealand, and South Africa have the lowest foreign index scores. The domestic index scores are indicative of the restrictions applied both to domestic and foreign banks, and it appears that the domestic index scores are highest for Japan, Korea, Malaysia, and the Philippines.

While the absolute values of the foreign and domestic index scores are not reported, the differences in the scores can be interpreted visually as a measurement of the discrimination applied to foreign banks. Thus, in Figure 1, India, Indonesia, Korea, Malaysia, the Philippines, Singapore, Thailand, and Turkey appear to have the highest discrimination against foreign banks. In Figure 2, Brazil, Chile, and Uruguay have the highest foreign index scores, Colombia, Mexico, and Venezuela have moderate scores, and Argentina, Canada, and the United States have the lowest scores. Chile and Uruguay have the highest domestic index scores, while Argentina, Canada, Mexico, the United States, and Venezuela have domestic index scores of zero. Brazil, Colombia, and Uruguay have the most discriminatory regimes

against foreign banks.<sup>7</sup> McGuire and Schuele (2000, pp. 212-13) further found that countries with less restricted banking sectors tended to have higher GNP per capita.

The frequency measures and indexes of restriction discussed thus far are especially useful in identifying the types of barriers and the relative degree of protection afforded to particular services sectors across countries. Deardorff and Stern (2004, Appendix 1) review a number of other studies that are based on measurements of this type and note that there exists a considerable amount of information on barriers covering a wide variety of services sectors, including financial services, telecommunications, accountancy, distribution, air transport, and electricity supply. As such, the construction of such measurements and indexes is an important first step that can provide the basis for the next step, which involves using available methodologies to assess the economic effects of maintaining or eliminating the barriers.

### ***Price-Impact Measurements***<sup>8</sup>

As discussed above, the nature of services tends to prevent the use of their differences across borders to measure their presence or size. Therefore, in order to construct measurements of the price and/or quantity effects of barriers to trade in services, some other approach is needed.

The simplest is just to make an informed guess. For example, having constructed a frequency ratio for offers to liberalize services trade in the GATS as discussed above, Hoekman (1995,1996) constructed weighted average measurements by sector and country. These “guesstimates” for 1-digit International Standard Industrial Classification (ISIC) sectors for selected countries are indicated in Table 12. It can be seen that the tariff equivalents are highest for ISIC 7, Transportation, Storage & Communication, reflecting the significant constraints applied within this sector. There is also considerable variation within the individual sectors for the relatively highly industrialized countries listed in Table 12. These measurements are designed to indicate only the *relative* degree of restriction and

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<sup>7</sup> The detailed scores for the components of the domestic and foreign banking restrictions are broken down by individual countries and are available on the Productivity Commission website.

<sup>8</sup>See Bosworth, Findlay, Trewin, and Warren (2000) for a useful methodological discussion of the construction and interpretation of price-impact measurements of impediments to services trade.

should not be taken literally as indicators of absolute ad valorem tariff equivalents. That is, the tariff equivalent benchmarks are just judgmental and are not distinguished according to their economic impact.

An improved approach that has been used in more recent studies is to combine other data together with an index or proxy measures of restrictiveness in order to estimate econometrically the effects of barriers. For example, suppose that an index of restrictiveness has been constructed for a group of countries, and that price data are also available for the services involved in this same group. Using knowledge and data on the economic determinants of these prices, an econometric model can be formulated to explain them. Then, if the restrictiveness index and/or proxy measures of restrictiveness are included, the estimated coefficient(s) will measure the effect of the trade restrictions on prices, controlling for the other determinants of prices that have been included in the model.

Use of this method of course requires data on more than just the barriers themselves, including prices and other relevant determinants of prices. However, these additional data may be needed for only a subset of the countries for which the restrictiveness measures have been constructed, so long as one can assume that the effects of restrictions may be common across countries. The coefficients relating restrictiveness to prices can be estimated for a subset of countries for which the requisite data are available, and the estimated coefficients can then be applied to the other countries as well. Examples of this approach are provided in Deardorff and Stern (2004, Appendix 1), covering several sectors, including international air services, wholesale and retail food distributors, banks, maritime services, engineering services, telecommunications, and industrial electricity supply in both developed and developing countries. These various sectors are evidently distinctive in terms of their economic characteristics and the regulatory measures that affect their operations. Specialized knowledge of the sectors is thus essential in designing the conceptual framework and adapting the available data to calculate the price impacts of the regulatory measures involved.

### ***Quantity-Impact Measurements***

Another approach, appropriate for some service industries, is to model the determination of quantity rather than price, and then include the trade restrictiveness index as a variable to estimate the effects of trade barriers on quantities. This approach has been used by Warren (2000) in assessing the quantitative impact of barriers in telecommunications services, chiefly mobile telephony and fixed network services, for 136 countries. His estimates of the tariff equivalents for domestic and for foreign providers of telecommunication services in the major nations are shown in Table 13. The estimates for the advanced industrialized countries are relatively low in comparison to the much higher estimates for the newly industrializing countries shown. There are cases of developing countries (not shown) that in some cases have very large tariff equivalents, including some with several hundred percent, e.g., China (804 and 1,000 percent), Colombia (11 percent and 24 percent), India (861 and 1,000 percent), Indonesia (71 and 128 percent), South Africa (14 and 21 percent), and Venezuela (10 and 15 percent).

### ***Gravity-Model Estimates***

Because the modeling of prices that is needed to estimate a price effect is necessarily very sector specific, the techniques described so far have limited use for quantifying barriers across sectors. Likewise, they are not useful for comparing the overall levels of service trade barriers across countries. For that, one needs a more general model of trade to use as a benchmark, and a choice available is the so-called gravity model, which relates bilateral trade volumes positively to the incomes of both trading partners and negatively to the distance between them. It has become a very popular tool in recent years for eliciting the effects of a wide variety of policy and structural influences on trade in a manner that controls for the obvious importance of income and distance.

Francois (1999) has fit a gravity model to bilateral services trade for the United States and its major trading partners, taking Hong Kong and Singapore to be free trade benchmarks. He took the differences between actual and predicted imports to be indicative of trade barriers and normalized them relative to the free trade benchmarks for Hong Kong and Singapore. His results for business/financial

services and for construction are indicated in Table 14. Brazil has the highest estimated tariff equivalent for business/financial services (35.7 percent), followed by Japan, China, Other South Asia, and Turkey at about 20 percent. The estimated tariff equivalents are considerably higher for construction services, in the 40-60 percent range for China, South Asia, Brazil, Turkey, Central Europe, Russia, and South Africa, and in the 10-30 percent range for the industrialized countries. Deardorff and Stern (2004, Appendix 1) discuss the limitations of the use and interpretation of gravity models, stressing that these models may overstate the effects of the barriers being measured and are not well suited for application for sectoral analysis.

### ***Financial-Based Measurements***

Hoekman (2000) has suggested that financial data on gross operating margins calculated by sector and country may provide information about the effects of government policies on firm entry and conditions of competition.<sup>9</sup> As he notes (p. 36):

“In general, a large number of factors will determine the ability of firms to generate high margins, including market size (number of firms), the business cycle, the state of competition policy enforcement, the substitutability of products, fixed costs, etc. Notwithstanding the impossibility of inferring that high margins are due to high barriers, there should be a correlation between the two across countries for any given sector. Data on operating margins provide some sense of the relative profitability of activities, and therefore, the relative magnitude (restrictiveness) of barriers to entry/exit that may exist.”

The country-region results of Hoekman’s analysis, averaged over firms and sectors for 1994-96, are indicated for agriculture, manufacturing, and services in Table 15. Sectoral results for services only are given in Table 16. Services margins are generally higher than manufacturing margins by 10-15 percentage points, and the services margins vary considerably across countries. Australia, Hong Kong, and Singapore have the lowest services margins – in the neighborhood of 20 percent – while Chile, China, Indonesia, Philippines, Taiwan, Thailand, and the United States have services margins in excess of 40 percent. The sectoral results indicate that the margins for hotels and financial services are relatively high,

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<sup>9</sup>Gross operating margins are defined as total sales revenue minus total average costs divided by total average costs.

and the margins for wholesale and retail trade are lower. The margins for several developing countries appear to be relatively high in a number of sectors. Overall, as Hoekman suggests (p. 39):

“...business services, consultancy, and distribution do not appear to be among the most protected sectors. ...barriers to competition are higher in transportation, finance, and telecommunications. These are also basic ‘backbone’ imports that are crucial for the ability of enterprises to compete internationally.”

## **V. Measuring the Economic Consequences of Liberalizing Services Barriers**

While the various measurements of services barriers that have been reviewed are of interest in themselves, they need to be incorporated into an explicit economic modeling framework in order to determine how the existence or removal of the barriers will affect conditions of competition, productivity, the allocation of resources, and economic welfare within or between sectors and countries. In this regard, a modeling framework can be devised for individual sectors or on an economy-wide basis using computable general equilibrium (CGE) modeling.

### **Sectoral Modeling**

An example of sectoral modeling is provided by Fink, Mattoo, and Rathindram (2003), who analyze the impact of policy reform on sectoral performance in basic telecommunications. Their data cover 86 developing countries globally for the period, 1985-1999. They address three questions, covering the impact of: (1) policy changes relating to ownership, competition, and regulation; (2) any one policy reform coupled with the implementation of complementary reforms; and (3) the sequencing of reforms.

Their findings are: (1) privatization and the introduction of competition significantly increase labor productivity and the density of telecommunication mainlines; (2) privatization and competition work best through their interactions; and (3) there are more favorable effects from introducing competition before privatization. They further conclude that autonomous technological progress outweighs the effects of policy reforms in increasing the growth of teledensity.

What is especially noteworthy about this type of study is its focus on both the policy and market structure of the sector and the econometric framework that is designed to measure the determinants of

teledensity and telecommunications productivity. The assessment of particular services barriers may therefore be most effectively addressed when incorporated into a sectoral modeling framework.<sup>10</sup>

### **Computable General Equilibrium (CGE) Modeling**

In contrast to sectoral modeling, CGE modeling provides a framework for multi-sectoral and multi-country analysis of the economy-wide effects of services barriers and related policies. Most CGE modeling research to date has been focused on barriers to international trade in goods rather than trade in services and FDI. The reasons for this stem in large part from the lack of comprehensive data on cross-border services trade and FDI and the associated barriers, together with the difficult conceptual problems of modeling that are encountered. Some indication of pertinent CGE modeling work relating to services is provided in Hardin and Holmes (1997, p. 85), Brown and Stern (2001, pp. 272-74), and Stern (2002, pp. 254-56). The approaches to modeling can be divided as follows: (1) analysis of cross-border services trade liberalization in response to reductions in services barriers; (2) modeling in which FDI is assumed to result from trade liberalization or other changes that generate international capital flows in the form of FDI in response to changes in rates of return; and (3) modeling of links between multinational corporations' (MNCs) parents and affiliates and distinctions between foreign and domestic firms in a given country/region.

For our purposes here, it useful to cite the results based on the first of the three modeling approaches noted, namely analyzing the effects of reductions in services barriers on the cross-border trade in services. In this connection, the present author has collaborated with Alan Deardorff (University of Michigan) since the early 1970s and with Drusilla Brown (Tufts University) since the mid-1980s in developing the Michigan Model of World Production and Trade. This is a computer-based model that has been used to study a variety of important policy issues such as the effects of the GATT/WTO multilateral

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<sup>10</sup> See also Fink, Mattoo, and Neagu (2002) and Deardorff and Stern (2004, Appendix 1) for discussion of a study of the importance of restrictive trade policies and private anti-competitive practices relating to international maritime services.

trade negotiations, changes in the structure of protection, trade and employment, and the effects of preferential trading arrangements.

Brown, Kiyota, and Stern (2005) have used the Michigan Model to evaluate the economic effects of the U.S. free trade arrangements (FTAs) negotiated with Central America (CAC), Australia, and Morocco as well as unilateral removal of existing trade barriers by the countries involved in the FTAs, and global (multilateral) free trade in which all of the major trading countries/regions completely remove all of their trade barriers. The analysis utilizes available tariff data for trade in agricultural products and manufactures and specially constructed estimates of services barriers based on Hoekman's financial-based measures noted in Tables 15 and 16. The results are indicated in Table 17 and can be summarized as follows:

1. Global free trade increases U.S. economic welfare by \$543 billion (5.4% of GNP). This is greater than the \$320 billion increase in U.S. economic welfare resulting from U.S. unilateral free trade. With global free trade, economic welfare rises by \$2.4 trillion. The components of the increases in welfare from global free trade are \$54 billion for agriculture, \$702 billion for manufactures, and \$1.7 trillion for services. These welfare increases greatly exceed the increases associated with the U.S. bilateral FTAs.
2. With global free trade, CAC economic welfare increases by \$18 billion (15% of GNP), as compared to a welfare increase of \$6.2 billion for unilateral free trade and \$5.3 billion for CAFTA.
3. With global free trade, Australia's economic welfare increases by \$30 billion (6% of GNP). This compares to a welfare increase of \$4.6 billion with unilateral free trade for Australia and \$5.4 billion for the U.S.-Australia FTA.
4. With global free trade, Morocco's economic welfare increases by \$5 billion (11% of GNP) as compared to \$1.6 billion for unilateral free trade and \$0.9 billion for the U.S.-Morocco FTA.

What is striking about these results is that services liberalization offers by far much greater potential increases in economic welfare as compared to agricultural and manufactures liberalization. This reflects the higher services barriers that have been calculated in comparison to the barriers involved in agriculture and manufactures trade. These computational results thus provide the rationale for pursuing services liberalization in the context of the ongoing Doha Development Agenda negotiations under WTO auspices.

A similar conclusion comes from the third type of modeling study noted that attempts to capture the important role played especially by MNCs and their foreign affiliates in providing Mode 3-type services. This is the focus of the study by Brown and Stern (2001), some details of which are presented in Deardorff and Stern (2004, Appendix 1). Brown and Stern analyze the effects of removal of services barriers under alternative conditions of international capital mobility and changes in the world capital stock due to increased investment. Their results suggest that the welfare effects of removing services barriers are sizable and vary across countries depending on how international capital movements and changes in domestic investment respond to changes in rates of return. The largest potential benefits are realized for all of the major developed and developing countries when allowance is made for changes in investment that augment the stock of capital.

## **VI. Priorities for Services Negotiations**

Mattoo (2003, pp. 13-16) offers some useful suggestions in devising priorities for services liberalization in the Doha Development Agenda negotiations, especially from the perspective of developing countries::

- **“Multilateral negotiations can help deliver both domestic reform and improved access. But several conditions must be fulfilled.**

...The challenge is to ensure that international commitments reflect good economic policy rather than the dictates of political economy or negotiating pressure. An informed judgment will require a thorough analysis of the implications of, and rationale for, the existing barriers. In particular, it is essential to distinguish between the areas where liberalization is prevented solely by the political power of vested interests – to which the WTO’s reciprocal market opening is an antidote – and the areas where regulatory or other problems need to be remedied before the full benefits of liberalization can be reaped. Even in the latter case, if the time frame for reform could be predicted, a government would be in a position to decide whether to pre-commit in the WTO to future liberalization, in order to lend credibility to the reform program and/or to obtain a negotiating benefit.

- **More policy research to help design reform programs**

Negotiating deadlines create a desirable sense of urgency about the need to find solution to reform problems, but negotiating pressure alone is hardly likely to produce the best responses.

...No country can participate meaningfully in international services negotiations without understanding how domestic reform is best implemented. Developing countries in particular could benefit from the experience of other countries on these issues....

Genuine ownership and understanding of reform strategies can...only come through active engagement by national stakeholders informed by independent research. ...A stock-taking exercise to consider national and cross-country experience with services reform could do much to identify the areas where there is little reason to defer market-opening and those where there is significant uncertainty and a consequent need to temper negotiating demands.

- **More technical support and resources to improve the regulatory environment**

...it is clear that improved regulation – ranging from prudential regulation in financial services to pro-competitive regulation in a variety of network-based services – will be critical to realizing the benefits of service liberalization. Policy intervention will also be necessary to ensure universal service because liberalization will not always deliver adequate access to the poor. ...a link may need to be established between any market-opening negotiated at the WTO and *additional* assistance for the complementary reform that is vital for successful liberalization....

- **More political support to deliver improved access to foreign markets – for its own sake, but also because it will facilitate further domestic reform**

As developing countries seek improved access for their exports, they must determine the appropriate approach to international negotiations, and choose in particular between two alternatives. One is a bilateral request-and-offer approach, the other is the use of generally applicable negotiating formulae or market schedules. ...it may be possible to develop formulae or market schedules for concerted or more coordinated approaches to liberalization, such that WTO Members end up making more far-reaching commitments....There seem to be four broad reasons to favor formulae/model schedules:

First, in a world of unequal bargaining power multilaterally agreed formulae that must be seen to be equitable and efficient are likely to produce a more favorable outcome for the weaker party than bilateral negotiations.

Second, formulae help reduce the transactions costs of negotiations – avoiding the need to barter commitments sector-by-sector, country-by-country. ...

Third, formulae can help overcome the free-rider problem that arises in negotiations conducted under an MFN-based system. ...

Finally, the use of multilaterally applied formulae is perhaps the only way of granting credit to unilateral liberalizers.”

The foregoing priorities for services liberalization have been put in the context of the Doha Development Agenda (DDA) multilateral negotiations that are currently underway. My reason for doing so is because multilateral negotiations provide opportunities for realization of the greatest economic benefits for all WTO member countries, far greater than may stem from the negotiation of

regional and bilateral FTAs that are receiving so much attention in the Western Hemisphere and elsewhere. In order for the DDA negotiations to succeed, the WTO members must act decisively to facilitate reciprocal liberalization, including possible linkages and tradeoffs across goods and services and within these categories. Governments must face up politically to counteract protectionism domestically and, through the pursuit of reciprocal liberalization, seek to mobilize their export interests in support of multilateralism. Much needs to be done to identify and measure the extant barriers to trade especially in services because of the complexities of these barriers and to design measures of regulatory reform of services that will complement and reinforce the liberalization process.

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**Table 1**  
**International Services Transactions by Modes of Supply, 2000**

Mode of Supply <sup>a</sup>	Category	Value (\$bn)	Cumulative share (%)
Mode 1	Commercial services (excl. travel)	972	41.0
Mode 2	Travel/Tourism	463	19.5
Mode 3	Gross output of foreign affiliates	896	37.8
Mode 4	Compensation of Employees	41	1.7
Total		2,372	100.0

<sup>a</sup>Modes 1, 2, and 4 are derived from balance-of-payments accounts. Mode 3 is derived from data on the operations of foreign affiliates in host countries.

Source: Chadha (2003, p. 70).

**Table 2**  
**Exports of Merchandise and Commercial Services<sup>a</sup>, 1980-2003**  
(Millions of US dollars at current prices)

	1980		1990		1995		2003	
	Merchandise	Services	Merchandise	Services	Merchandise	Services	Merchandise	Services
Andean Economies	30,466	3,048	31,133	4,024	39,495	5,073	52,887	5,229
Bolivia	942	80	926	133	1,100	174	1,573	266
Colombia	3,924	1,294	6,766	1,548	10,056	1,641	12,671	1,724
Ecuador	2,481	348	2,714	508	4,307	687	6,039	889
Peru	3,898	663	3,230	714	5,575	1,042	8,954	1,560
Venezuela	19,221	663	17,497	1,121	18,457	1,529	23,650	790
Other L.A Economies	79,269	14,460	115,532	25,577	189,024	39,024	324,716	55,402
United States	225,566	38,110	393,592	132,880	584,743	198,501	723,805	287,695
European Union (15) <sup>b</sup>	689,293	179,581	1,391,092	344,710	1,905,478	472,841	2,900,735	822,839
Japan	130,441	18,760	287,581	41,384	443,116	63,966	471,817	70,624
Rest of the World	988,837	126,886	1,376,482	262,654	2,228,315	452,128	3,406,576	615,331
<b>Total</b>	<b>2,034,137</b>	<b>363,337</b>	<b>3,448,747</b>	<b>781,628</b>	<b>5,161,652</b>	<b>1,187,436</b>	<b>7,502,933</b>	<b>1,796,489</b>

a. Include transportation , travel, and other services.

b. Partly estimated for 1980 and 1990

Source: WTO Statistics Database [[http://www.wto.org/english/res\\_e/statis\\_e/statis\\_e.htm](http://www.wto.org/english/res_e/statis_e/statis_e.htm)].

**Table 3**  
**Imports of Merchandise and Commercial Services, 1980-2003**  
(Millions of US dollars at current prices)

	1980		1990		1995		2003	
	Merchandise	Services	Merchandise	Services	Merchandise	Services	Merchandise	Services
Andean Economies	22,057	7,059	18,107	6,189	39,662	10,721	39,815	10,795
Bolivia	665	238	687	291	1,424	321	1,613	535
Colombia	4,739	1,134	5,590	1,683	13,853	2,824	13,892	3,232
Ecuador	2,253	661	1,861	755	4,152	1,141	6,534	1,467
Peru	2,573	825	2,634	1,070	7,584	1,781	8,470	2,484
Venezuela	11,827	4,201	7,335	2,390	12,649	4,654	9,306	3,077
Other L.A Economies	101,391	21,485	111,344	28,794	212,803	43,355	326,208	57,044
United States	256,984	28,890	516,987	97,950	770,852	129,108	1,303,050	228,535
European Union (15)	775,138	158,693	1,438,333	330,572	1,822,802	468,266	2,811,923	794,289
Japan	141,296	32,100	235,368	84,281	335,882	121,548	382,930	110,263
Rest of the World	901,666	180,165	1,359,002	308,758	2,349,342	482,233	3,280,226	649,280
Total	2,075,084	399,848	3,549,690	821,561	5,278,878	1,201,155	7,778,129	1,782,367

Source: See Table 1.

**Table 4**  
**Trade in Transportation Services, 1980-2003**  
(Millions of US dollars at current prices)

	<b>1980</b>		<b>1990</b>		<b>1995</b>		<b>2003</b>	
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
Andean Economies	1,082	2,758	1,542	2,347	1,887	4,221	1,680	4,469
Bolivia	29	138	48	179	78	211	83	276
Colombia	418	530	484	588	565	1,191	634	1,260
Ecuador	129	254	242	314	322	484	342	635
Peru	221	487	310	465	338	905	296	978
Venezuela	285	1,349	458	801	584	1,430	325	1,320
Other L.A Economies	3,911	9,518	5,998	10,557	8,688	18,214	10,378	15,236
United States	14,240	15,380	37,330	35,510	44,999	41,713	47,526	65,725
European Union (15)	55,086	55,436	82,025	87,219	106,806	110,163	166,214	167,449
Japan	12,730	16,890	17,750	26,650	22,506	35,924	26,502	34,196
Rest of the World	47,542	68,424	78,575	100,270	118,140	150,837	154,089	197,473
Total	134,591	168,406	223,220	262,553	303,026	361,072	406,389	484,548

Source: See Table 1.

**Table 5**  
**Trade in Travel Services, 1980-2003**  
(Millions of US dollars at current prices)

	1980		1990		1995		2003	
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
Andean Economies	1,181	2,629	1,365	2,007	2,244	3,172	2,538	2,898
Bolivia	36	55	58	60	55	48	90	90
Colombia	478	240	406	454	657	878	813	1,024
Ecuador	131	228	188	175	255	235	406	354
Peru	293	107	217	295	428	297	923	620
Venezuela	243	1,999	496	1,023	849	1,714	306	810
Other L.A Economies	6,725	6,801	14,427	10,383	20,311	12,934	30,551	15,290
United States	10,590	10,410	50,400	38,100	74,791	46,261	84,123	59,664
European Union (15)	50,174	43,975	114,987	109,056	156,946	155,516	221,337	225,637
Japan	640	4,590	3,590	24,930	3,224	36,764	3,539	28,959
Rest of the World	41,228	46,351	95,838	92,397	165,669	142,603	218,293	181,554
Total	102,632	105,326	264,815	264,483	400,630	381,144	527,292	495,814

Source: See Table 1.

**Table 6**  
**Trade in Other Commercial Services, 1980-2003**  
(Millions of US dollars at current prices)

	1980		1990		1995		2003	
	Exports	Import	Exports	Import	Exports	Import	Exports	Import
Andean Economies	785	1,672	1,117	1,834	942	3,327	1,010	3,430
Bolivia	14	45	27	51	41	61	93	169
Colombia	398	364	658	641	419	755	276	949
Ecuador	88	179	78	266	110	422	141	478
Peru	149	231	187	310	276	579	341	887
Venezuela	136	853	167	566	96	1,510	159	947
Other L.A Economies	3,825	5,167	5,153	7,855	10,026	12,208	14,475	26,516
United States	13,280	3,100	45,150	24,340	78,711	41,134	156,046	103,146
European Union (15)	67,170	52,574	134,481	117,581	193,993	185,719	405,197	372,955
Japan	5,390	10,620	20,044	32,701	38,236	48,859	40,583	47,109
Rest of the World	40,272	59,823	93,915	119,903	172,839	183,225	260,982	278,794
Total	126,112	126,117	293,590	294,525	483,779	458,937	862,808	802,004

Source: See Table 1.

**Table 7**  
**Gross Domestic Product**

	<b>Bolivia</b>		<b>Colombia</b>		<b>Ecuador</b>		<b>Peru</b>		<b>Venezuela</b>	
	1994	2003	1994	2003	1994	2003	1994	2003	1994	2002
Total Value <sup>a</sup>	17,230	23,837	67,533	79,820	14,270	17,834	87,375	132,153	558,202	495,881
By Economic Sector, % of GDP										
Agriculture	16.3	14.6	13.9	14.0	19.7	7.7	8.2	9.3	5.4	2.6
Industry	34.2	33.2	36.0	30.6	28.5	28.7	25.3	26.5	41.7	43.0
Manufactures	18.8	14.7	20.5	15.9	15.9	10.7	16.2	14.6	17.6	...
Services	49.5	52.2	50.1	55.4	51.8	63.6	57.3	54.6	52.9	54.4
GDP per capita <sup>b</sup>	886.4	944.3	2,325.7	2,321.1	1,776.3	1,812.3	2,115.1	2,437.7	3,482.0	2,654.8
GDP per capita <sup>c</sup>	2,053.7	2,214.5	5,761.8	5,899.5	3,085.2	3,203.4	3,984.6	4,580.0	5,581.1	4,269.1

a. Millions of local currencies at constant prices

b. Constant 1995 US\$

3. PPP constant 1995 international \$

Source: Andean Community Statistics: <http://www.comunidadandina.org/estadisticas.asp>

World Bank Data and Statistics: <http://www.worldbank.org/data/countrydata/countrydata.html>

**Table 8**  
**Population and Labor Force**  
**(Thousands)**

	<b>Bolivia</b>		<b>Colombia</b>		<b>Ecuador</b>		<b>Peru</b>		<b>Venezuela</b>	
	1994	2003	1994	2003	1994	2003	1994	2003	1994	2003
Population	7,311	9,012	37,810	44,562	11,221	13,343	23,130	26,951	21,377	25,554
Labor Force	2,578	3,394	14,328	18,363	4,114	5,491	9,049	11,688	7,867	10,385
Urban	1,486 (58)	2,223 (66)	10,313 (72)	14,102 (77)	2,484 (60)	3,659 (67)	6,343 (70)	8,553 (73)	6,893 (88)	9,340 (90)
Rural	1,092 (42)	1,171 (34)	4,015 (28)	4,261 (23)	1,631 (40)	1,832 (33)	2,707 (30)	3,134 (27)	974 (12)	1,044 (10)

Note: numbers in parentheses indicate proportions of total labor force.

Source: Andean Community Statistics: <http://www.comunidadandina.org/estadisticas.asp>

**Table 9**  
**Stock of Inward Foreign Direct Investment, 2003**  
**(Millions of U.S. Dollars)**

	<b>Bolivia</b>	<b>Colombia</b>	<b>Ecuador</b>	<b>Peru</b>	<b>Venezuela</b>
Total Inward FDI	6,730	19,063	11,240	12,745	34,241
U.S. FDI	NA	2,751	1,446	2,659	10,859
Mining	NA	238	887	1,142	2,678
Utilities	NA	124	--	147	2,208
Manufacturing	NA	1,129	72	208	2,698
Services	NA	1,260	487	1,162	3,275

NA – Not available.

Sources: UNCTAD, FDI Database [<http://www.unctad.org>]

U.S. Bureau of Economic Analysis, *Survey of Current Business*, July 2004, p. 49.

**Table 10**  
**Restriction Categories for Banking Services**

<b>Restriction category</b>		<b>Relevant for foreign index</b>	<b>Total weight</b>	<b>Relevant for domestic index</b>	<b>Total weight</b>
<i>Restrictions on commercial presence</i>					
Licensing of banks		Yes	0.200	Yes	0.190
	Based inversely on the maximum number of new banking licenses issued with only prudential requirements				
Direct investment		Yes	0.200	Yes	0.190
	Based inversely on the maximum equity participation permitted in an existing domestic bank				
Joint venture arrangements		Yes	0.100	No	n.a.
	New bank entry only through joint venture with a domestic bank				
Movement of people		Yes	0.020	No	n.a.
	Based inversely on years that executives, specialists and/or senior managers can stay				
<i>Other restrictions</i>					
Raising funds by banks		Yes	0.100	Yes	0.143
	Banks are restricted from accepting deposits from the public and/or raising funds from domestic capital markets				
Lending funds by banks		Yes	0.100	Yes	0.143
	Banks are restricted in types or sizes of loans and/or are directed to lend to housing and small business				
Other business of banks – insurance and securities services		Yes	0.200	Yes	0.095
	Banks are excluded from insurance and/or securities services				
Expanding the number of banking outlets		Yes	0.050	Yes	0.048
	Based inversely on the number of outlets permitted.				
Composition of the board of directors		Yes	0.020	No	n.a.
	Based inversely on the percentage of the board that can comprise foreigners				
Temporary movement of people		Yes	0.010	No	n.a.
	Based inversely on the number of days temporary entry permitted to executives, specialists and/or senior managers				
<i>Total weighting or highest possible score</i>			1.000		0.808

Source: McGuire and Schuele (2000), Tables 12.1 and 12.3, pp. 204-05, 208.

**Table 11**  
**Barriers to FDI**

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<i>Restrictions on market entry</i>	<ul style="list-style-type: none"> <li>Bans on foreign investment in certain sectors</li> <li>Quantitative restrictions (e.g., limit of 25 per cent foreign ownership in a sector)</li> <li>Screening and approval (sometimes involving national interest or net economic benefits tests)</li> <li>Restrictions on the legal form of the foreign entity</li> <li>Minimum capital requirements</li> <li>Conditions on subsequent investment</li> <li>Conditions on location</li> <li>Admission taxes</li> </ul>
<i>Ownership and control restrictions</i>	<ul style="list-style-type: none"> <li>Compulsory joint ventures with domestic investors</li> <li>Limits on the number of foreign board members</li> <li>Government appointed board members</li> <li>Government approval required for certain decisions</li> <li>Restrictions on foreign shareholders' rights</li> <li>Mandatory transfer of some ownership to locals within a specified time (e.g., 15 years)</li> </ul>
<i>Operational restrictions</i>	<ul style="list-style-type: none"> <li>Performance requirements (e.g., export requirements)</li> <li>Local content restrictions</li> <li>Restrictions on imports of labor, capital and raw materials</li> <li>Operational permits or licences</li> <li>Ceilings on royalties</li> <li>Restrictions on repatriation of capital and profits</li> </ul>

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Source: UNCTAD (1996).

**Table 12**  
**Constructed Ad Valorem Tariff Equivalent “Guesstimates” by 1-Digit ISIC Services**  
**Sectors for Selected Countries (Percentage)**

Country	ISIC 5 Con- struction	ISIC 6 Wholesale & Retail Distr.	ISIC 7 Transp., Storage & Communic.	ISIC 8 Business & Fin. Services	ISIC 9 Social & Personal Services
Australia	12.0	7.4	183.4	24.8	25.4
Austria	5.0	4.6	98.7	20.1	13.9
Canada	6.0	9.0	117.7	25.9	40.2
Chile	40.0	34.4	182.2	45.2	42.9
European Union	10.0	10.0	182.0	27.2	23.6
Finland	19.0	14.6	181.0	23.8	31.7
Hong Kong	32.0	31.5	149.8	39.0	42.9
Japan	5.0	4.6	142.0	28.9	32.3
Korea	16.0	21.4	164.9	36.3	40.7
Mexico	24.0	21.3	152.3	40.9	29.8
New Zealand	5.0	13.4	181.5	30.5	36.1
Norway	5.0	13.4	122.2	25.7	24.0
Singapore	12.0	34.4	138.8	35.9	33.7
Sweden	12.0	13.4	184.2	22.5	26.9
Switzerland	5.0	8.0	178.1	27.7	32.3
Turkey	5.0	34.4	31.6	35.4	35.9
United States	5.0	4.6	111.4	21.7	31.7

Source: Hoekman (1995, pp. 355-56).

**Table 13**  
**Tariff Equivalents of Barriers to Telecommunication**  
**Services in Major Nations**  
**(Percentage)**

	<b>Domestic</b>	<b>Foreign</b>
Australia	0.31	0.31
Austria	0.85	0.85
Belgium	0.65	1.31
Brazil	3.81	5.68
Canada	1.07	3.37
Chile	1.68	1.68
Denmark	0.20	0.20
Finland	0.00	0.00
France	0.34	1.43
Germany	0.32	0.32
Hong Kong	1.26	1.26
Ireland	1.46	2.67
Italy	1.00	1.00
Japan	0.26	0.26
Korea	4.30	8.43
Mexico	6.24	14.43
Netherlands	0.20	0.20
New Zealand	0.27	0.27
Singapore	2.10	2.72
Spain	2.03	3.93
Sweden	0.65	0.65
Switzerland	1.23	1.23
Turkey	19.59	33.53
United Kingdom	0.00	0.00
United States	0.20	0.20

Source: Adapted from Warren (2000).

**Table 14**  
**Estimated Tariff Equivalents in Traded Services:**  
**Gravity-Model Based Regression Method**  
**(Percentage)**

Countries/regions	Business/financial services	Construction
North America <sup>†</sup>	8.2	9.8
Western Europe	8.5	18.3
Australia and New Zealand	6.9	24.4
Japan	19.7	29.7
China	18.8	40.9
Taiwan	2.6	5.3
Other Newly Industrialized Countries	2.1	10.3
Indonesia <sup>1</sup>	6.8	9.6
Other South East Asia	5.0	17.7
India	13.1	61.6
Other South Asia <sup>*</sup>	20.4	46.3
Brazil	35.7	57.2
Other Latin America	4.7	26.0
Turkey <sup>*</sup>	20.4	46.3
Other Middle East and North Africa	4.0	9.5
CEECs & Russia	18.4	51.9
South Africa	15.7	42.1
Other Sub-Saharan Africa	0.3	11.1
Rest of World (ROW)	20.4	46.3

<sup>\*</sup>Turkey and Other South Asia are not available, separately, in the U.S. data, and have been assigned estimated ROW values.

<sup>†</sup>North America values involve assigning Canada/Mexico numbers to the United States.

Source: Francois (1999).

**Table 15**  
**Average Gross Operating Margins of Firms Listed on National**  
**Stock Exchanges, 1994-96 by Country/Region**  
**(Percentage)**

<b>Country/Region</b>	<b>Agriculture</b>	<b>Manufacturing</b>	<b>Services</b>
Australia	8.4	15.5	16.6
Canada	32.1	22.6	32.9
Chile	39.1	40.8	44.0
China	30.6	28.1	49.5
European Union	22.9	23.8	31.6
Hong Kong	25.9	12.8	18.1
Indonesia	41.8	34.3	41.3
Japan	38.4	26.4	28.7
Republic of Korea	11.2	25.7	25.8
Malaysia	22.6	6.0	21.6
Mexico	38.4	39.3	37.2
New Zealand	33.3	16.6	26.8
Philippines	18.1	28.6	42.3
Singapore	0.0	11.1	22.0
Taiwan	19.6	25.1	41.3
Thailand	38.2	27.3	52.6
United States	36.6	21.2	42.3
Rest of Cairns Group <sup>a</sup>	36.3	31.1	39.0

<sup>a</sup> Includes Argentina, Brazil, and Colombia.

Source: Hoekman (2000). Based on calculations using Disclosure, *Worldscope* (1998) data.

**Table 16**  
**Average Gross Operating Margins of Services Firms Listed on**  
**National Stock Exchanges, 1994-96, by Country/Region and by Sector**  
**(Percentage)**

<b>Country/Region</b>	<b>Recreation</b>	<b>Business Services</b>	<b>Construction</b>	<b>Consulting</b>	<b>Finance</b>	<b>Health</b>	<b>Hotels</b>	<b>Retail Trade</b>	<b>Wholesale</b>	<b>Transport/ Utilities</b>
Australia	17.9	13.8	15.3	7.0	41.0	b	27.3	7.9	9.1	c
Canada	60.1	51.7	14.4	19.2	44.5	2.3	67.8	12.0	16.0	36.5
Chile	b	b	68.7	b	55.2	b	b	21.3	27.9	46.8
China	b	b	45.9	67.1	34.0	b	77.5	24.4	25.5	46.9
European Union	42.5	32.1	19.3	22.1	51.6	22.3	23.7	23.6	19.9	32.6
Hong Kong	b	6.5	12.9	11.5	25.4	b	31.3	10.1	6.9	31.0
Indonesia	b	81.1	22.9	25.3	53.6	b	68.2	26.4	24.8	45.3
Japan	28.1	31.6	14.2	28.6	40.5	40.1	27.2	32.9	15.6	20.6
Republic of Korea	b	41.2	15.3	b	b	b	b	26.7	14.9	31.2
Malaysia	13.3	c	18.3	14.7	28.3	24.3	38.7	11.2	10.8	30.7
Mexico	19.6	b	25.7	37.3	33.3	b	49.6	28.4	25.0	51.0
New Zealand	b	b	13.8	b	57.6	b	26.9	6.6	19.7	35.6
Philippines	19.9	b	40.2	b	53.9	b	55.8	43.9	40.3	42.3
Singapore	46.7	8.6	10.6	7.7	46.3	29.2	28.2	5.4	7.9	28.0
Taiwan	79.9	36.3	21.6	11.1	64.8	b	74.5	21.5	23.2	38.9
Thailand	85.4	35.8	38.1	c	60.3	40.6	55.5	44.2	25.6	56.7
United States	46.8	56.2	20.2	c	56.3	37.0	48.5	34.6	27.0	43.4
Other Cairns <sup>a</sup>	b	b	28.9	26.2	69.8	29.3	64.6	24.2	22.9	52.4

<sup>a</sup> Includes Argentina, Brazil, and Colombia.

<sup>b</sup> Data not available.

<sup>c</sup> Reflects negative gross operating margin.

Source: Hoekman (2000). Based on calculations using Disclosure, *Worldscope* (1998) data.

**Table 17. Computation of Welfare Effects of Bilateral FTAs, Unilateral Free Trade, and Global Free Trade (Billions of Dollars and Percent)**

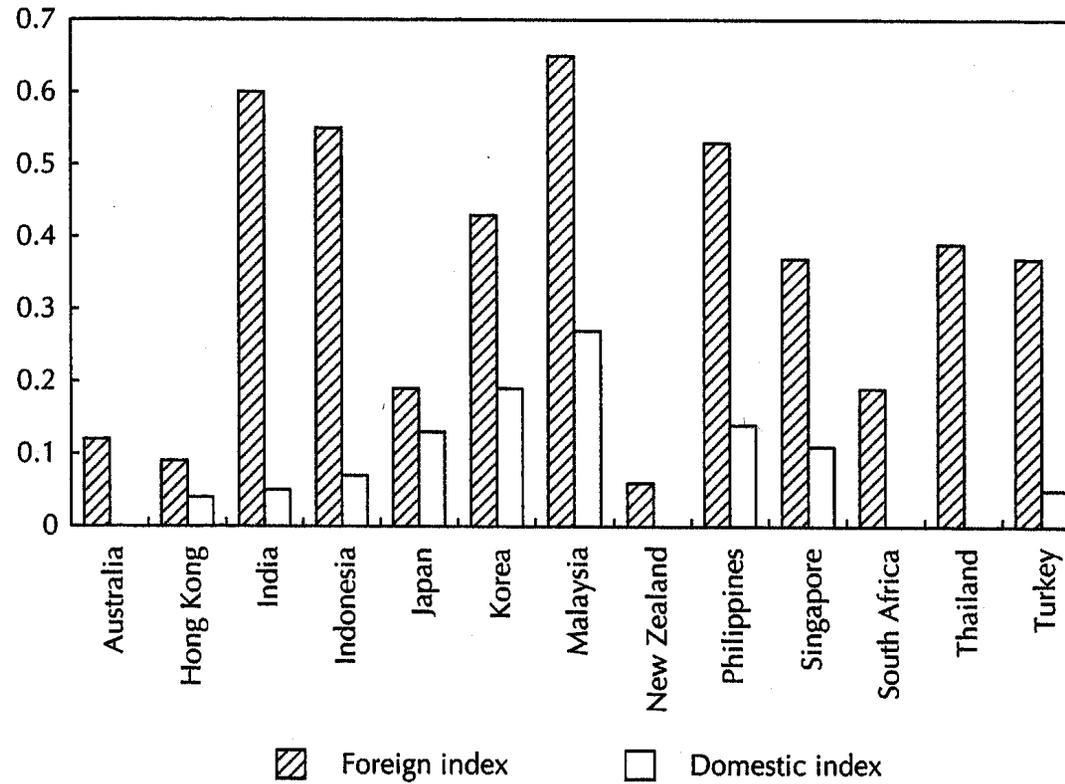
<b>Bilateral Free Trade</b>			<b>Unilateral Free Trade</b>			<b>Global Free Trade</b>		
<i>US-CAC</i>	Welfare		<i>United States</i>	Welfare		<i>Agricultural Protection</i>	Welfare	
	(U.S.\$)	(% of GNP)		(U.S.\$)	(% of GNP)		(U.S.\$)	(% of GNP)
United States	17.3	0.2	United States	320.2	3.2	United States	0.4	0.0
CAC	5.3	4.4	Global	507.0		CAC	0.5	0.4
Global	15.7		<i>CAC</i>	Welfare		Australia	-0.1	0.0
<i>US-Australia</i>	Welfare			(U.S.\$)	(% of GNP)	Morocco	0.4	0.8
	(U.S.\$)	(% of GNP)	CAC	6.2	5.1	Global	53.9	
United States	19.4	0.2	Global	33.7		<i>Manufactures Tariffs</i>	Welfare	
Australia	5.4	1.1	<i>Australia</i>	Welfare			(U.S.\$)	(% of GNP)
Global	23.1			(U.S.\$)	(% of GNP)	United States	75.7	0.8
<i>US-Morocco</i>	Welfare		Australia	4.6	0.9	CAC	7.7	6.5
	(U.S.\$)	(% of GNP)	Global	19.3		Australia	11.2	2.2
United States	6.0	0.1	<i>Morocco</i>	Welfare		Morocco	1.9	4.4
Morocco	0.9	2.0		(U.S.\$)	(% of GNP)	Global	701.6	
Global	7.5		Morocco	1.6	3.5	<i>Services Barriers</i>	Welfare	
			Global	11.4			(U.S.\$)	(% of GNP)
						United States	466.4	4.6
						CAC	9.5	8.0
						Australia	19.0	3.8
						Morocco	2.5	5.7
						Global	1,661.8	

<i>Total</i>	Welfare	
	(U.S.\$)	(% of GNP)
United States	542.5	5.4
CAC	17.7	14.8
Australia	30.1	6.0
Morocco	4.8	10.9
Global	2,417.3	

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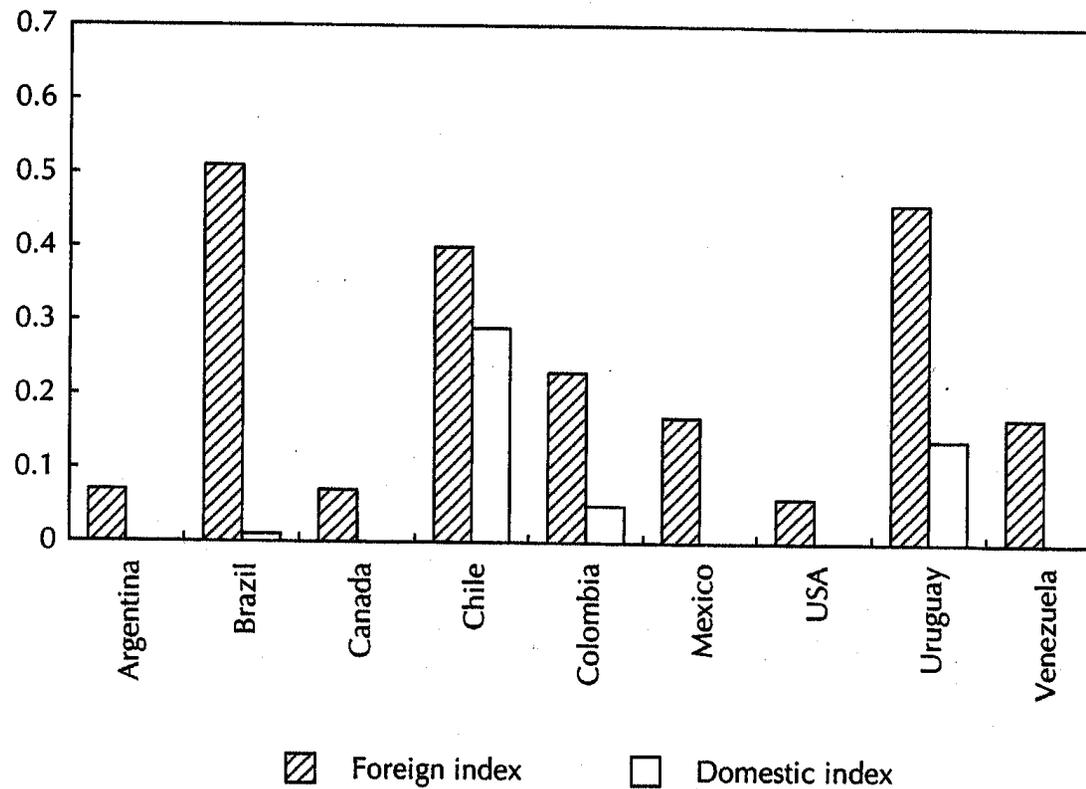
Source: Brown, Kiyota, and Stern (2005).

**Figure 1**  
**Restrictiveness Indexes for Selected Asia-Pacific Economies, South Africa, and Turkey**



*Note:* The higher the score the more restrictive an economy; scores range from 0 to 1.  
*Source:* McGuire and Schuele (2000, p. 211)

**Figure 2**  
**Restrictiveness Indexes for Selected Western Hemisphere Economies**



*Note:* The higher the score the more restrictive an economy; scores range from 0 to 1.  
*Source:* McGuire and Schuele (2000, p. 211)