

Liberalizing Trade in Services: A Survey*

Bernard Hoekman
World Bank and CEPR

Abstract: Since the mid 1980s a substantial amount of research has been undertaken on trade in services. Much of this is inspired by the WTO or regional trade agreements, especially the EU, but an increasing number of papers focus on the impacts of services sector liberalization. This paper surveys the literature, focusing on contributions that investigate the determinants of international trade and investment in services, the potential gains from greater trade (and liberalization) and efforts to cooperate to achieve such liberalization through trade agreements. There is increasing evidence that services liberalization is a major potential source of welfare gain, and that the performance of service sectors, and thus services policies, may be an important determinant of trade volumes, the distributional effects of trade, and economy-wide growth. Relatively little research has been done on the political economy of services trade and investment policies and the implications for the design of international cooperation – whether trade agreements or development assistance. This is an important lacuna given the extensive efforts that are invested by governments in the pursuit of such cooperation, both bilateral and multilateral.

JEL codes: F1, F2, F5, L80

Keywords: trade in services, WTO, GATS, trade agreements, economic development

World Bank Policy Research Working Paper 4030, October 2006

The Policy Research Working Paper Series disseminates the findings of work in progress to encourage the exchange of ideas about development issues. An objective of the series is to get the findings out quickly, even if the presentations are less than fully polished. The papers carry the names of the authors and should be cited accordingly. The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors. They do not necessarily represent the view of the World Bank, its Executive Directors, or the countries they represent. Policy Research Working Papers are available online at <http://econ.worldbank.org>.

* An earlier version of this paper appeared as Hoekman (2006). I am grateful to Carsten Fink for detailed comments, and to Rolf Adlung, Kym Anderson, Philippa Dee, Joe Francois, Rolf Langhammer, Keith Maskus and Aaditya Mattoo for helpful suggestions, inputs and discussions.

Introduction

One of the stylized facts of economic development is that the share of services in GDP and employment rises as per capita incomes increase. In the lowest-income countries, services generate some 35 percent of GDP. This rises to over 70 percent of national income and employment in OECD countries. The expansion in the services-intensity of economies is driven by a number of factors, including income elasticities of demand that exceed 1 and the incentives for firms to spin off activities to specialized providers as the extent of the market expands. Advances in information and communication technologies are increasingly permitting cross-border, “disembodied” trade in labor-intensive services, accelerating the growth of services activities. The competitiveness of firms in open economies is determined in part by access to low-cost and high-quality producer services – telecommunications, transport and distribution services, financial intermediation, etc. The widely remarked upon processes variously called global outsourcing, fragmentation, production sharing, and offshoring depend on access to and the cost of such services.

While the expanding importance of services in the economy has of course not gone unnoticed, services have not figured prominently in the economic growth and development literature, and have only recently come to be considered in the trade literature. Traditional international economics textbooks tend to assume (assert) that services are largely nontradable. Initially limited to a few path-breaking studies such as those by Baumol (1967), Fuchs (1968), and Hill (1977), starting in the 1980s more attention began to be devoted to services. One reason for this was the emergence of services on the international policy agenda, largely as the result of U.S. proposals to negotiate multilateral rules on policies affecting trade in services. The initial response of most countries to the U.S. initiative, put forward formally at the 1982 GATT Ministerial meeting, was guarded. One result was to mobilize the first analytical contributions to the trade literature. The initial research effort suggested that many countries had a potential interest in liberalizing trade in services,¹ reflected, for example, in many of the poorest developing countries having a “revealed comparative advantage” (RCA) in services when measured on a balance-of-payments basis (Hoekman, 1990).² This realization helped overcome some of the early resistance by

¹ See, e.g., Sapir and Lutz (1980, 1981), Bhagwati (1987), Hindley (1988), and Stern and Hoekman (1987). Griffiths (1975) is an early study documenting barriers to trade in services.

² The RCA index is the ratio of a country's exports of specific products to its total exports relative to the world average. If the ratio is greater than one the country is said to have a revealed comparative advantage in the product. As discussed below, limiting attention to cross-border trade flows as measured by the balance of payments is inappropriate given that there are other “modes” of supplying foreign markets.

developing countries to launching negotiations on trade in services in the Uruguay Round and the creation of the WTO General Agreement on Trade in Services (GATS) in 1994.³

A substantial amount of research has subsequently been undertaken on trade in services.⁴ This paper surveys the literature, focusing on papers that analyze the determinants of the internationalization of services (Section 1), the potential (net) gains from greater trade (liberalization) (Section 2), as well as specific sectors and “modes” of contesting service markets (Section 3). It also reviews the literature on efforts to cooperate to achieve such liberalization – both through the WTO General Agreement on Trade in Services (GATS) (Section 4) and regional integration agreements (Section 5). The paper concludes with a discussion of the outstanding research agenda (Section 6).

1. Determinants and Patterns of Trade in Services

Francois and Reinert (1996) document the role of services in economies at differing levels of development, using input-output tables to analyze the contribution of services activities to user industries and final (consumer) demand.⁵ They note that the importance of services in relative terms increases as countries become richer, and that this is also reflected in an increasing variety of market services (product differentiation). They also observe that even if services are not traded directly, they are embodied in the output of both tradable and nontraded activities, and thus are a determinant of overall employment and productivity. The indirect exports of services embodied in a country’s exports of goods can be quite large, with services accounting for the majority of the foreign exchange that is earned.

The rise in the share of services in output and employment as countries become richer reflects a number of factors. Common explanations include increasing specialization and exchange of services through the market (“outsourcing”), with an associated increase in variety and quality that may raise productivity of firms and welfare of final consumers, in turn increasing demand for purchased services and the fact that the scope for (labor) productivity in the provision of many “consumer” services is less than in agriculture and manufacturing. The latter

³ See Feketekuty (1988) for an influential and comprehensive discussion of why and how services were put on the agenda of the GATT as well as a contemporary survey of the issues involved.

⁴ Much of this either focuses on the Uruguay Round talks and/or the GATS or are inspired by it. Books on services that have been published on the economics of services, services trade and economic development in the last 25 years include Inman (1985), Riddle (1986), Giarini (1987), Giersch (1988), Messerlin and Sauvant (1990), Harker (1996), UNCTAD and World Bank (1994), Stibora and de Vaal (1995), Sauvé and Stern (2000), Stern (2000) and Findlay and Warren (2000). Sapir and Winter (1994) survey the literature as of the early 1990s.

⁵ See also Kravis, Heston and Summers (1983), Inman (1985), Blades (1987), Stern and Hoekman (1988), Park (1989), Park and Chan (1989) and Uno (1989).

implies that over time the (real) costs of these services will rise relative to merchandise, as will their share of employment (Baumol, 1967; Fuchs, 1968).

Modes of international exchange

Because services are often not storable, their exchange frequently requires the proximity of supplier and consumer – providers must move to the location of the buyer/consumer of a service, or vice versa. The significance of the proximity constraint for service transactions to be feasible means that “trade” will often involve a mix of cross-border transactions and local presence of suppliers. The latter may be foreign or domestic – in general, services provision will often have an element of jointness in production, in the sense that complementary inputs – including other services – are needed to allow effective exchange (trade) of a service to occur.⁶ Asymmetric information and the resulting need for regulation also implies that regulatory regimes pertaining to (temporary) movement of people (visa restrictions; economic needs tests) and longer-term establishment (FDI policies) of service suppliers are important determinants of the feasibility of trade in services. All these factors also have important implications for the market structure that is observed in service industries. On the one hand, proximity requirements may imply the absence of scale economies, while on the other they give rise to potentially extensive product differentiation as services are tailored to individual consumers. Regulatory costs may be important across a range of services and can imply high fixed costs. Problems of asymmetric information require firms to invest in and maintain a reputation for quality. Sunk location-specific costs may generate significant market power and barriers to entry.

Because services are intangible and often difficult if not impossible to store they tend to be embodied in goods, information flows or in people. Some of the implications of the need for proximity between providers and demanders for exchange to be feasible are explored by Bhagwati (1984a). He describes the processes through which services are “disembodied” or “splintered” from goods or people as “carriers”. Starting in the 1980s technological changes were increasingly making such processes more feasible. Trade in services may then expand as a result of the incentive to “splinter” the production chain geographically, not just in terms of tangible inputs but also services.

Bhagwati notes that long-distance, cross-border exchange through telecommunications networks implies that the same forces that drive trade in goods will also apply to trade in those services where such splintering is possible. The same is true if international transactions occur

⁶ This aspect of services exchange was stressed by Hill (1977). See De Vany et al. (1983) for a model of services provision as jointly produced by provider and consumer of the service. As discussed below, Horn and Shy (1996) stress that services trade will require use of inputs produced in the importing nation.

through physical movement of consumers to the location of service providers (for example, tourism), or via temporary entry of service providers into the territory of a consumer (for example, consulting). In a statistical sense all the above transactions comprise trade and are registered as such in the balance of payments. They all involve exchanges between the resident of one country and that of another.

Sampson and Snape (1985) develop a typology of trade in services that was largely incorporated in the design of the GATS. The first of these modes, what has come to be called mode 1 in GATS-speak or *cross-border supply*, applies when service suppliers resident in one country provide services in another country without either supplier or buyer/consumer moving to the physical location of the other. Mode 2, *consumption abroad*, refers to a consumer resident in one country moving to the location of the supplier(s) to consume a service. Mode 3, *commercial presence*, refers to legal persons (firms) moving to the location of consumers to sell services locally through the establishment of a foreign affiliate or branch.⁷ The fourth mode of supply, mode 4 or *movement of natural persons*, refers to a process through which individuals (temporarily) move to the country of the consumer to provide the service.

Many of the early theoretical contributions on services trade distinguished between factor and non-factor services. This suggested that there was nothing special about services insofar as trade in non-factor services can be regarded as being embodied in goods — and thus covered by GATT — while factor services (natural and legal persons) are not. The implication was that negotiating attention should center on FDI and the (temporary) movement of service suppliers — that is, international factor movement.⁸ Over time, however, it became increasingly apparent that the disembodied cross-border trade in services that was the focus of Bhagwati's (1984) analysis was not a theoretical curiosity but was rapidly growing as technological advances permitted services to be digitized and transported internationally through satellite and telecom networks.

Global cross-border trade in services stood at \$2.4 trillion in 2005, of which some \$1.3 trillion was in the non-travel (tourism) and non-transport categories.⁹ Excluding intra-EU cross-border trade, the total is some \$1.9 trillion. As total trade in merchandise was some \$10 trillion in 2005, cross-border trade in services reported in balance-of-payments statistics is about 20 percent of world trade. Despite the often expressed view that services trade has been expanding rapidly, including as a result of services outsourcing, the 20% share of services receipts in total

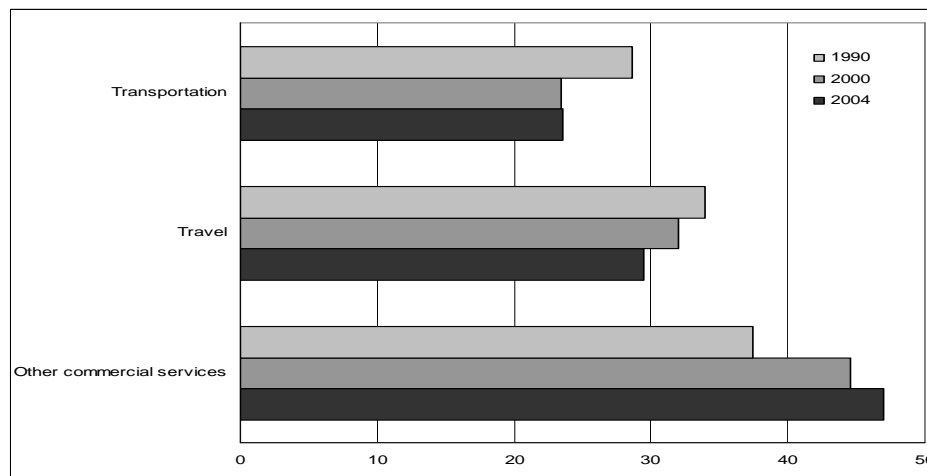
⁷ As of the early 1990s, some 50 percent of the global stock of FDI already involved services activities (Sauvant and Zimny, 1987; Hoekman, 1990).

⁸ Grubel (1987) was a prominent proponent of the argument that all trade was embodied in goods or in factors (people, FDI). Implicitly if not explicitly empirical studies of the factor content of a nation's trade are premised on this view.

⁹ See http://www.wto.org/english/news_e/pres06_e/pr437_e.htm.

trade has remained relatively constant since the 1980s. In part this is because of the dynamic growth that has occurred in merchandise trade – driven by fragmentation and global production sharing intra-industry trade – and in part it reflects the fact that many services remain less or nontradable. The relatively constant share of total services in world trade hides large changes in the composition of trade. Much of the recent growth in cross-border services trade has been in so-called business process outsourcing (BPO) services, which occurs mostly through mode 1-type transactions and is captured in the balance of payments category “other commercial services”. The rapid growth in trade in such activities has led to a significant decline in the shares of more traditional services – transport and travel (Figure 1).

Figure 1. Sectoral shares of services in total world services exports, 1990-2004



Source: WTO (2005).

Mode 1 has become more controversial in policy terms as the absolute value of such trade has grown. Bhagwati, Panagariya and Srinivasan (2004) point out that mode 1 trade in services is analytically equivalent to a technical change that lowers the relative price (wage) of more skilled-intensive labor in the importing country.¹⁰ This will have standard distributional consequences for factors of production and generate an overall gain for the economy in the absence of significant adverse terms of trade effects.¹¹ Such adverse effects may be possible, but in itself this is not something that is specific to the trade being in services or occurring via mode 1. More likely is that such trade will raise productivity if it is an input or raise real incomes if it

¹⁰ Bhagwati (1984b) pointed out that as services tend to be cheaper in developing countries, they have great potential to export services directly, as well as embodied in goods. Bhagwati was prescient in recognizing this and the associated policy implications—one of which is to reduce the pressure/need for migration. However, given that the scope for cross-border trade through telecommunications networks will be limited for many services, pressures for such factor movement—temporary or longer-term—will persist, explaining why mode 4 exports is an important subject for developing countries in the context of trade agreements.

¹¹ Bradford Jensen and Kletzer (2005) assess the impacts of services trade on wages and employment of workers with different skill levels in the US.

satisfies final demand. To date the number of jobs affected by mode 1 trade in services has been small, in part because the share of total services transactions that involve international flows are just a small part of the total market for services that can be provided at arms-length (in ‘disembodied’ form). Bhagwati et al. also note that much of the mode 1 trade that is observed is intra-firm – flows between a parent and affiliate firms – and that what matters is the *net* effect. Two-way trade in mode 1 services is important, i.e., there is both “insourcing” as well as outsourcing. Moreover, mode 1 imports are often associated with mode 3 ‘exports’, so that the imports of mode 1 services are complemented by an income flow from outward FDI in services that supports the mode 1 imports.¹²

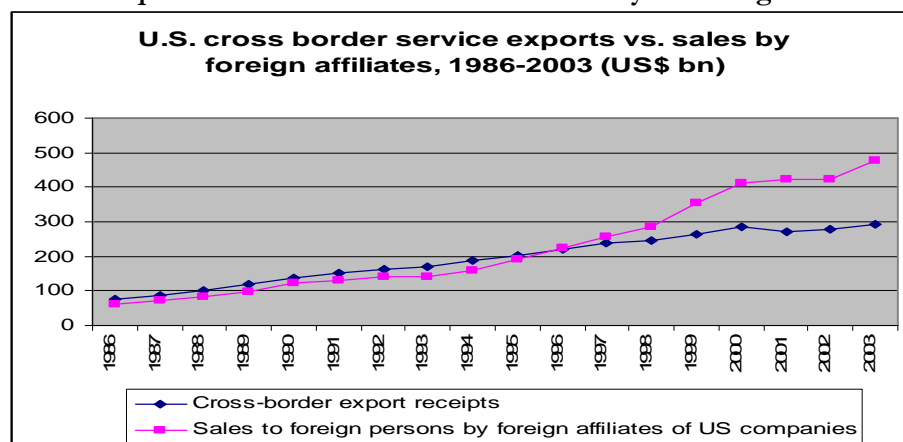
Boddewyn, Halbrich and Perry (1986) is an early paper focusing on “mode 3”, analyzing whether what has now become the standard paradigm to explain FDI—ownership, location and internalization incentives—carries over to service multinationals. They argue that it does, but also note that certain features of services are likely to have implications for the form that FDI takes. For example, franchising and leasing type arrangements are likely to be more prevalent, as for some services equity control of affiliates is not needed by the multinational. Empirical research on the determinants of services FDI has concluded that services FDI tends to be market seeking and is positively correlated with prior FDI in the manufacturing and industry sectors. Both explanatory variables are intuitive in that they reflect the characteristics of services (non-storability in particular). Raff and Ruhr (2001), for example, develop a theoretical model of FDI in business services that predicts that US FDI in business services should be affected by informational barriers to entry that are easier to overcome in markets in which there is already a significant U.S. business presence. The implication is that the host market should have a larger effect on service FDI the larger the ratio of U.S. FDI to local market size. They test the predictions of their model using panel data on U.S. FDI in 23 host countries from 1976 to 1995 and find that its predictions cannot be rejected.¹³

As mentioned, the GATS/WTO defines trade in services as comprising not just cross-border transactions (mode 1) and payments associated with movement of providers and consumers (modes 4 and 2), but also the *sales* of foreign affiliates that have been established in host countries (mode 3). This implies a need to complement measurement of transactions on the

¹² Markusen (2005) is a more extensive analysis of the determinants and effects of offshoring of producer services that comes to similar conclusions regarding the applicability of existing theoretical “toolkits”. Amiti and Wei (2005) and van Welsum (2004) discuss the magnitude of services outsourcing and the relationship with in- and outward FDI in greater depth. Murray and Kotabe (1999) analyze the determinants of domestic vs. international services sourcing decisions of US firms.

basis of geographic location with measures that center on the ownership of firms.¹⁴ The concept of ‘Foreign Affiliates Trade in Services’ (FATS) was created by statisticians in the late 1990s in a new Manual on Statistics of International Trade in Services. The aim of the Manual is to lay out agreed methodologies for defining and collecting data on transactions in services while ensuring consistency with existing international statistical standards (Karsenty, 2000). Sales of services by affiliates of foreign-owned firms are not regarded as trade in the national accounts or balance of payments – giving rise to the need to collect such data separately. Progress on collecting such statistics has been made (Whichard, 2000), but the extent of available data remains limited. The best FATS data are collected by the US. They suggest that mode 3 is the most important channel for US firms to sell services to foreigners. In 2003, sales of services by US foreign affiliates (\$477 billion) were some 50 percent higher than total cross border services exports as registered in the balance of payments (\$292 billion) (Figure 2). The global stock of FDI stood at some \$10 trillion in 2004, of which about 60 percent was in services.¹⁵ If extrapolated to global trade flows, the US data suggest that total FATS could be on the order of some \$2 trillion.¹⁶

Figure 2. US exports of services and sales of services by US foreign affiliates



Source: US Department of Commerce, Bureau of Economic Analysis.

¹³ Other empirical papers in this vein include Erramilli and Rao (1993), Buch and Lipponer (2004), and Kolstad and Villanger (2004). UNCTAD (2004) is a recent survey of services FDI. Sauvart and Zimny (1987) is an early paper stressing the importance of FDI as a mode of supplying services in a foreign market.

¹⁴ Baldwin and Kimura (1998) attempt to measure transactions on the basis of ownership, as opposed to the location of factors of production, in order to better capture the close relationship between firms' cross-border trading activities and the sales and purchasing activities of their foreign affiliates. They propose supplementary accounting formats that classify cross-border and foreign affiliate activities on an ownership basis. One format combines net cross-border sales by Americans to foreigners, net sales by foreign affiliates of U.S. firms to foreigners, and net sales of U.S. firms to U.S. affiliates of foreign firms to yield a figure that indicates net sales by Americans to foreigners. Another accounting format measures the value-added embodied in cross-border and foreign affiliate activities on an ownership basis.

¹⁵ Up from only 25% in 1970. See <http://www.unctad.org/Templates/Page.asp?intItemID=1923&lang=1>. Mody (2004) is a recent discussion of the impacts of the expansion in global FDI flows and stocks.

¹⁶ The stock of outward FDI by the US in 2003 was some \$1.8 trillion, of which \$1.3 trillion was in services (UNCTAD 2005). Given FATS of \$477 billion in 2003, this gives a sales/stock ratio of 0.35. Assuming some \$6 trillion global FDI in services, this generates a FATS estimate of \$2.1 trillion.

The importance of FATS reflects the nontradability of many services. Given that this constraint presumably was more binding before the recent advances in technology that allow business process outsourcing, the pattern observed in Figure 2 is somewhat surprising. The more rapid rise in FATS than cross border trade in services since the mid 1990s presumably is driven by changes in policy towards FDI and large scale privatization of service sector firms in many countries during the late 1980s and the 1990s.¹⁷ It may well be that increased use of services outsourcing will result in cross-border trade in services again coming to dominate FATS at some point in the future, but this is far from being the case today.

The relative magnitude of FATS and cross border trade is in part determined by accounting conventions. For example, licensing and franchising are often used methods of exploiting firm-specific assets in services industries such as hotels and transportation. Franchising essentially involves a payment flow for an intangible asset (knowledge, reputation, etc.). In principle such payments are captured in the balance of payments under royalties and license fees and/or leasing, so that there is double counting if FATS data for such activities are also included. Similar issues arise more generally with respect to the trade in “headquarter” or “management” services associated with coordination and running of a multinational firm, which is now a basic feature of international trade theory that allows for the existence of FDI (e.g., Helpman and Krugman, 1985; Rivera-Batiz and Rivera-Batiz, 1992; Markusen and Venables, 1998, 2000). How to measure and value the associated intra-firm services transactions/flows is a major challenge for statisticians.¹⁸

Differences between goods and services liberalization

Do standard concepts and theories explaining the pattern of trade in goods apply to services trade given the complications arising from the existence of alternative modes of supply and the associated factor movement that may occur? A number of papers in the mid 1980s concluded that standard concepts of comparative advantage and theories of the determinants of trade patterns could be applied to services (Hindley and Smith 1984; Deardorff, 1985).¹⁹ Insofar as

¹⁷ There has also been a marked shift in the composition of global FDI flows. In 1970 finance and trade (distribution) accounted for 65% of the total stock; this dropped to 45% in 2003. Conversely, the share of telecoms, energy, and business services has risen from 17% to 44%. There are also significant differences in FDI inflows into developed and developing countries. Thus, business services accounted for 40% of the total inward FDI stock in developing countries in 2003, compared to only 20% in the OECD. Non-equity FDI is not captured in the forgoing statistics (e.g. franchising, management contracts, or leasing).

¹⁸ The Bureau of Economic Analysis reports data on such intra-firm transactions. In an early contribution to the trade in services literature, Rugman (1987) argued that the financial returns related to all FDI outflows should be included in the definition of trade in services, as a proxy for non-reported intra-firm trade in intermediate services between parent and affiliates.

¹⁹ While Melvin (1989) suggested that standard predictions may not hold, this paper focused on a combination of goods and factor trade, not on services trade as a distinct activity.

factor movement is involved, standard tools and concepts can be applied, with welfare impacts depending on what is assumed (observed) regarding the income accruing to the factors concerned and the nationality of the owners of the factors.

However, there are differences between goods and services that have implications for both normative and positive analysis. One difference is that goods do not fulfill the type of intermediation role many services do or generate the types of network externalities some service industries do – an issue discussed further below.²⁰ Another difference is that the prediction of the law of one price – that similar, close substitutes will have the same real price in different locations adjusted for transport costs – will not apply as many services require local factor inputs to be applied in a transaction. Thus, local factor prices will be a determinant of the prices prevailing in different markets. In addition, local regulation may differ across jurisdictions, impacting differentially on local costs. A consequence is that the law of one price may not hold for goods either. Horn and Shy (1996) argue that once account is taken of the fact that many services are “bundled” with goods, and that the associated services-input bundle is nontrabable in the sense it must be provided locally, in direct proximity to the consumer/buyer of the goods – think of maintenance, training, distribution, etc. – liberalization of trade in goods may not result in an integrated market, because of differences in the prices/costs of the ancillary services that make up the “product bundle”.²¹

In general, international services transactions are more complex to analyze because of the need to consider different “modes of supply” (different “carriers” that transport services), their availability (costs), and the relationship between different modes (complements or substitutes). The pattern of trade will depend in part on the feasibility (cost) of using alternative modes. For example, technology or policy changes may lead to a shift from trade in final goods embodying nontraded services inputs to trade in service intermediates.

There has been little empirical work on the determinants of the pattern of trade in services and the use of alternative modes of supply. Langhammer (2004) calculates revealed comparative advantage (RCA) indices for modes 1 and 3 trade for the EU, Japan and US. The former can be expected to reflect relative resource endowments, while the latter will be determined by services characteristics (need for producer-consumer proximity) and domestic regulations and other variables that determine the attractiveness of the country for FDI. He shows that RCAs for US trade in services are similar in some service sectors for the two modes,

²⁰ This is also important because it may imply that the techniques used to assess the impacts of barriers to entry and competition for goods may be inappropriate.

²¹ There is an extensive literature on the role on nontradable inputs in tests of the law of one price. See, e.g., Obstfeld and Rogoff (2000).

but not in all. Thus, for communication services the US has a positive RCA when measured on the basis of FATS (mode 3) but a negative one if measured on the basis of mode 1 transactions.²²

Many services are differentiated products, tailored to the specific needs of individual buyers, and supplied using technologies characterized by fixed costs and increasing returns to scale or scope. The same is true of many goods, explaining why many models that incorporate trade in services to some extent simply involve relabeling intermediate input varieties as ‘services’. For example, Markusen (1989), Burgess (1989), Francois (1990b) and Ethier and Horn (1991) model producer services as intermediate inputs that are an increasing returns activity. This is a useful extension of papers that assume a constant returns, perfect competition framework to analyze services trade (e.g., Hirsch, 1989; Jones and Ruane, 1990; Melvin, 1989), but many of the specific characteristics of services (limited tradability, multiple modes of supply, network externalities, asymmetric information, fixed costs and regulation) are generally not considered explicitly. These papers illustrate that in comparison to an economy that trades final goods produced with domestic, nontraded service inputs and labor, one that can trade the services inputs (“factor services”) directly may have greater gains from trade and higher total factor productivity (TFP).

The more recent literature incorporates FDI in services and recognizes that FDI may be driven by the nontradability of the products concerned. Markusen, Rutherford and Tarr (2005) explore the potential effects of FDI restrictions on services on the pattern of trade and national welfare of a host country. They conclude that FDI is beneficial to host economies—not only because it is a source of new knowledge and competitive pressure, but also because FDI in services can help host countries to begin to produce and export more advanced products. In their model, as barriers to trade in producer services fall, costs of imported services fall, and imports (including through FDI) rise and displace domestic firms. However, the additional varieties available to the economy generate positive externalities for final goods production, raising TFP and welfare disproportionately. Their analysis suggests that the rationale for ownership-type FDI restrictions may be weak if it has the effect of inhibiting entry.²³ Among the interesting results are that if barriers were initially high, liberalization of trade in services may result in the country switching to exporting the service intensive good, and that trade in producer

²² This may reflect the idiosyncrasies of the international pricing regime for telecom services which lead the US to have the largest outward settlement payments for call termination charges.

²³ This is also one of the more robust findings of the empirical literature reviewed below.

services may be a general equilibrium *complement* for unskilled local labor (in that it fosters overall demand for such labor).²⁴

Yet another difference between goods and services trade (liberalization) is that many services are network industries. This has a number of potential implications for the distribution and magnitude of gains from integrating markets. Bhattarai and Whalley (2003) argue that the absolute (aggregate) benefits of network liberalization (integration) are likely to be more evenly divided between large and small countries than is the case for goods, as the larger per capita gain to small countries from access to a larger market is offset by the size of the country. Thus, the analogy of a small country benefiting disproportionately from liberalization may not hold. Bhattarai and Whalley also show that in the case of services network industries the overall gains from cooperation may be very large as there can be strong incentives for governments to impose very high taxes in the non-cooperative Nash equilibrium, taxes that exceed the optimal retaliatory tariffs that would apply in the case of goods trade.²⁵

Interactions between trade in goods and services, and between modes of supply

An interesting question that has begun to be investigated is the relationship between trade in goods, “traditionally defined” trade in services (modes 1 and 2), and trade in (movement of) factors of production (modes 3 and 4). Although at a conceptual level the case that this does not matter much for global welfare is compelling—in that what countries trade are the products and activities that use the factors/resources with which they are relatively well-endowed most intensively and that this will be embodied in the factor content of what they trade (Deardorff 1985) – this insight is not very useful for either policy analysis or for understanding the relationships between alternative modes of supply. For example, most studies of the factor content of trade focus on trade in (final) goods and ignore traded services, be they final demand products or intermediates (e.g., Davis and Weinstein, 2001). Insofar as intermediate inputs are considered, it has been shown by Reimer (2006) that it is inappropriate to assume that foreign inputs used by the importing country embody its domestic factor intensities. Extending the analysis of factor content of trade to include services is clearly an area for further research.

Explicit consideration of the existence of alternative modes of supply and their relationships is needed not just for better understanding of the determinants and pattern of

²⁴ Other papers that investigate the implications of different types of services trade for the pattern of trade and welfare – in particular modes 1 and 3 – include Stibora and de Vaal (1995), van Marrewijk et al. (1996, 1997) and de Vaal and van den Berg (1999). Van Welsum (2004) finds that US data suggest that overall inward FDI into the US has a negative effect on trade in services, whereas non-services FDI tends to be positively correlated with services trade.

²⁵ In related research, Kikuchi and Ichikawa (2002) analyze the implications of congestion in services networks on the pattern of comparative advantage for large vs. small countries.

trade, but also the effects of policies. Whether different modes of supply are complements or substitutes will have important implications for the effects of specific policies. Thus, if modes are substitutes, a particular policy restriction may be redundant or less restrictive than it would appear to be when considered in isolation. Moreover, as discussed further below, policies that restrict one mode more than another may generate inefficiencies.

It is well known that liberalization need not be welfare improving if there are sectors that are subject to increasing returns or there are terms of trade effects. Given the prevalence of increasing returns and imperfect competition in many services industries, a policy implication is that countries are more likely to gain from liberalization of trade in services as long as it is undertaken on a wide enough basis to offset any potential negative terms of trade effects.²⁶ As noted in some of the papers discussed below, not all types of partial liberalization will necessarily raise welfare. Much depends on market structure and the contestability of the service industries concerned and the nationality of ownership of firms. However, a number of arguments have been offered in the services context that imperfect competition may well (further) increase the gains from liberalization. First, liberalizing trade in services is likely to encourage greater specialization, thus helping to realize increasing (international) returns where these exist. Even if a country does not happen to have comparative advantage in certain services, liberalization may have a positive effect in terms of encouraging further fragmentation of production activities, fostering exports of merchandise and/or other services. If mode 3 is the main mode of supply, the prices affected by liberalization are internal prices, so that the associated terms of trade effects can be neutral or even positive (Dee and Sidorenko, 2006).

One channel through which “magnification effects” may occur is through a reduction in trade costs, many of which are services-related. Trade costs are often (much) greater in *ad valorem* equivalent terms than the border barriers that confront goods when entering an export market. The most obvious source of such costs is infrastructure-related services. For example, shipping margins have been found to be a multiple of tariffs for developing country exports to the US (Fink, Mattoo and Neagu, 2001). Limão and Venables (2001) show that infrastructure is quantitatively important in determining transport costs. They estimate that poor infrastructure accounts for 40 percent of predicted transport costs for coastal countries and up to 60 percent for landlocked countries. Francois and Manchin (2006) use data on bilateral trade for a large set of countries, including instances of zero observed trade, to examine the influence of institutions,

²⁶ It is sometimes argued that informational asymmetries (e.g., quality uncertainties) are important for some service activities and may justify infant industry protection. If so, liberalization will not be optimal. However, Grossman and Horn (1988) show that informational barriers to entry do not justify barriers to trade as these do not offset the source of the market failure.

geographic context, and infrastructure on trade. Using a panel of bilateral trade and tariff data from 1988 to 2002, and controlling for bilateral tariff preferences and the correlation between GDP and infrastructure and institutional development, they conclude that infrastructure is a significant determinant not only of export levels, but also of the likelihood exports will take place at all. The sample variation in basic infrastructure (communications and transportation) explains substantially more of the overall sample variation in exports than do the trade barriers faced by developing countries. Similarly, Djankov, Freund and Cong (2006) find that internal transport and related transactions costs are a major factor determining the competitiveness of (potential) exporters.

Such cost factors reflect the specific role played by “transport” services—they are intermediates that help determine the costs of trade in goods and thus the producer prices received by firms.²⁷ Deardorff (2001) illustrates the importance of transport-related costs as a barrier to trade in goods (and services), and the potential welfare gains from actions that lower such costs. These gains may be much larger proportionately than those that can be obtained from merchandise trade policy reforms insofar as the transport costs generate real resource costs as opposed to rents. With tariff liberalization there is redistribution from producers and the government (tariff revenue) to consumers, so that gains are limited to removal of the deadweight losses associated with taxing trade. Lowering trade service (transport) costs also results in the recovery of deadweight losses, but not the redistribution of tariff revenue. Whether the net welfare gains from lower costs exceed those from an equivalent tariff reduction depends on the size of the reduction in costs. Insofar as policy generates redundant procedures and duplication of fixed costs, the potential gains from liberalization of “trade services” are likely to be large.²⁸ Francois and Wooton (2001a), examine the interaction between different modes of market access liberalization in services – cross-border and establishment – and the prevailing market structure in a domestic services industry. They develop a model of a domestic service sector that is imperfectly competitive (acts as a cartel) and assume there are barriers to cross-border competition (“trade costs”). They then investigate the implications of lowering these barriers and giving the foreign firm access to domestic consumers through establishment (FDI or mode 3). They illustrate that in such a setting domestic firms have an incentive to accommodate the entry of a foreign firm by inviting it to establish (FDI) and join the domestic

²⁷ Anderson and van Wincoop (2004) conclude that the ad valorem tax equivalent of total trade costs in rich countries is about 170 percent and even higher for poor countries.

²⁸ Langhammer (2006) analyzes the impact of liberalization of intermediate services in developed and developing countries on effective rates of protection of manufacturing and finds that indirect effects of greater competition in services – in terms of more variety and lower prices – is larger than the direct effect, as reflected in the associated change in the implicit effective rate of protection for manufacturing sectors.

cartel. If trading costs affecting the use of mode 1 remain high enough, the effect of foreign entry through mode 3 will be welfare reducing for the domestic country as it results in part of the rents generated by the cartel going to the foreign firm. Francois and Wooton therefore illustrate one of the ways in which there are interdependencies across modes of supply and the policies affecting the feasibility (cost) of using alternative modes. In their case, as the costs of mode 1 fall (for whatever reason), the incentive for domestic oligopolistic sectors to accommodate foreign competitors through welfare reducing establishment rises. A policy implication is that active domestic competition law enforcement may be beneficial in such instances.

In related research, Francois and Wooton (2006) note that trade in goods may depend on the degree of market power exercised by the domestic trade and distribution sectors. An absence of competition in the domestic service sector can serve as an effective import barrier against goods. Their econometric results point to statistically significant linkages between effective market access conditions for goods and the structure of the domestic service sector. An implication is that services liberalization can boost trade in goods. More important, by ignoring the structure of the domestic service sector, the benefits of tariff reductions may be overstated (a finding that is similar to that of Horn and Shy 1996, albeit for different reasons). They also find that competition in margin sectors matters more for poorer and smaller exporting countries than for others, which is intuitive given that small players will have less, if any, ability to counteract the exercise of market power they confront.

Other research has also illustrated the interdependence between the efficiency of available domestic service sectors and trade in goods. Fink, Mattoo and Neagu (2005) show that international communication costs are a determinant of export performance for higher value, differentiated products, whereas they matter less for more homogenous, bulk type commodity trade. Beck (2002) finds a positive association between economies with better developed financial systems and export-oriented manufacturing industries, as the former allows financing of large-scale, high-return investment projects. Freund and Weinhold (2004) find that access to the Internet increases trade in goods, noting that this is consistent with a model where there are market-specific fixed information/search costs that are lowered as a result of the Internet. In a related paper, Freund and Weinhold (2002) conclude that the Internet – measured by the number of Internet hosts in a country – is also positively associated with the value of cross-border services trade as measured by the balance of payments category “other private services” – i.e., mode 1.

Numerous “services inputs” therefore affect the volume and composition of trade. Many of these input costs will factor into the overall level of trade costs confronting firms. A policy implication is that efforts to facilitate trade must go beyond customs clearance and related procedures, and be informed by analyses that identify the most binding (cost-raising) constraints. One attempt to go down this path has been made by Wilson, Mann and Otsuki (2005). They use a gravity model to estimate the effects of four “trade cost” variables: port efficiency, customs clearance, the regulatory environment more broadly, and service sector infrastructure (telecommunications, e-business) across 75 countries for the 2000-2001 period. The total potential expansion in trade in manufactures from trade facilitation improvements in all the four areas – raising performance of “underperformers” to the average in the sample – is estimated to be \$377 billion. The cost of achieving these improvements is not assessed, however, although the analysis does generate information on a country basis regarding the relative return to action on each of the four facilitation areas.

2. Policies affecting trade in services and impacts of liberalization

The empirical literature on international trade in services and trade policy is limited, reflecting the weakness of the available data on both flows and policies. Because services are generally intangible, barriers to trade do not take the form of import tariffs. Instead, trade barriers take the form of prohibitions, quotas, and government regulation. Quotas may limit the quantity or value of imports of specific products for a given time period, or restrict the number or market share of foreign providers of services that are allowed to establish. Such discriminatory measures are often complemented by nondiscriminatory measures applying equally to foreign and domestic providers. These may consist of limitations on the number of firms allowed to contest a market, or on the nature of their operations. Frequently, this involves either a monopoly (telecommunications) or an oligopolistic market structure (insurance, air transport). As discussed by Sapir (1993) considerations relating to consumer protection, high fixed (sunk) costs (increasing returns to scale), prudential supervision and regulatory oversight often induce governments to require establishment by foreign providers or to reserve activities for government-owned or controlled entities.

Measuring policy restrictiveness

A necessary but not sufficient condition for free trade in services is the elimination of discrimination between alternative sources of supply. Thus, foreign products/providers should be subject to regulations that are no less favorable than those applied to domestic products/providers (i.e., national treatment), and all foreign products/providers should be

subject to the same barriers, if any (i.e., nondiscrimination or most-favored-nation (MFN) treatment.). Liberalization then refers to actions that reduce discrimination. However, reducing discrimination may not result in a greater volume of international transactions. Thus, if government policies support a monopoly, nondiscrimination will have no effect, as entry is barred to all potential sources, whether foreign or domestic. More generally, even if entry is feasible, policy may affect the operating costs of a foreign entrant differentially from domestic firms. As a result of these considerations, the literature on services trade policies argue that a distinction needs to be made between policies that discriminate on the basis of nationality of ownership of factors of production, and whether policies affect *entry* into a market – through whatever mode of supply, including mode 3 (establishment/FDI) – and/or the *operation* of firms (see, e.g., Warren and Findley, 2000; Deardorff and Stern, 2006). This can alternatively be thought about in terms of whether policies affect fixed or variable costs, and, whether they create rents for incumbent (domestic) firms. Table 1 illustrates the typology of various possibilities.

The availability of information on policies that restrict international trade in services is limited.²⁹ In large part this reflects the immense difficulty of identifying and quantifying barriers to services trade, which in turn is a reflection of the historical nontradability of most services. Detailed data on goods trade flows exist because these flows are taxed – the data are an ancillary product of the application of tariffs on imports imposed at the border. As services are not observed crossing borders – at best factors of production (labor, suppliers) may be observed – governments need to survey economic activity in order to get a picture of trade in services.³⁰

Table 1. A Typology of Policies Affecting Trade in Services

	Impact on entry/establishment	Impact on operations
Non-discriminatory	E.g., A limit of two mobile phone providers permitted to operate in the country;	E.g., all retail banks must have personnel on call to monitor and service ATMs
Discriminatory	E.g., nationality requirements for senior managers of affiliates; maximum equity ownership limit for foreign investors;	E.g., car and fire insurance subject to additional capital requirements; cross-border provision of insurance services subject to price regulation

Two different approaches have been taken to assess the magnitude and impact of policy barriers to trade. The first involves collection of information on applied policies, converting these into coverage/frequency indicators and using the resulting indices as regressors to explain

²⁹ UNCTAD and World Bank (1994) and Hoekman and Primo Braga (1997) are surveys of the policy literature.

³⁰ See for example, Stern and Hoekman (1987), Karsenty (2000) and Whichard (2000).

observed measures of prices or costs (often the price-cost margin is the focus of estimation).³¹ The second approach is to rely on indirect methods such as calculation of price-cost margins by sector across countries or gravity regressions to estimate what trade flows “should be” and back out an estimate of the tariff equivalent of policies from the difference between estimated and observed flows. A well-known problem with indirect approaches is that it is not possible to attribute price-cost margins or differences in trade volumes to specific policies – other factors such as the business cycle and natural barriers to trade/contestability will also play a role. Most of the literature has therefore pursued the first approach, although more use has been made of gravity regressions as data on bilateral trade in services has become available for OECD countries.

Information on policy can in principle be collected on a sector-by-sector basis, but is not available in the form of databases of the kinds that researchers can use when analyzing merchandise trade flows. Although there is much to complain about as regards the latter databases – see, e.g., Anderson and van Wincoop (2004) – the situation is incomparably worse for services. What would appear to be the most obvious source of information of services policies – trade agreements – is at best incomplete and at worst misleading given the limited coverage of country commitments.³² Efforts to directly measure the extent of policy barriers on a sectoral and cross-country basis employ a policy index of some kind that is used to estimate the price, cost or quantity effects of policies. The policy indices are constructed by identifying existing policies towards entry/establishment and seeking to determine if policies differentiate between domestic and foreign firms. For example, in the case of distribution services, a country may have restrictions on nationality of workers, limits on operating hours, restrictions on size and location, rules that prevent advertising through specific types of product promotions, product carve outs for state monopolies, and limits on the temporary entry of workers (engineers, executives, etc.). What is needed is to identify the set of potentially pertinent policies and to assign relative weights to them, something that generally requires sectoral experts and is inherently subjective.³³

Once indices of policy have been constructed, the approach taken in much of the literature is to use this information by estimating their price and/or cost effects, controlling for standard determinants of performance for the sector concerned. A problem in doing this is to

³¹ Price comparisons of services across countries are generally inappropriate given the characteristics of services – the use of local inputs, extensive product differentiation and heterogeneity, etc.

³² As is often remarked in the literature, a major problem with the WTO (GATS) is that a positive list approach to scheduling commitments was used, which does not generate comprehensive and economically meaningful data on the measures that are imposed by countries (see Section 4 below).

³³ See Dee (2006) and Deardorff and Stern (2006) for detailed surveys of existing work along these lines.

distinguish the effects of nondiscriminatory regulation from discriminatory policies. Regulations generally will increase fixed and/or variable costs of production for firms, and may result in a *de facto* or *de jure* exclusion of new entry, thereby increasing prices. Insofar as regulation is motivated by market failures created by the characteristics of specific service industries – e.g., network externalities, asymmetric information – such price impacts may be social welfare enhancing.

Much of the existing research mapping policies into “restrictiveness indices” has been done by and for the Australian Productivity Commission. This work suggests that barriers to services trade appear to be substantial, especially for modes 3 and 4, in the sense that there is significant discrimination against foreign providers of services (Findlay and Warren 2000). Some of the results of this sector-specific research are discussed further below; a number of the price and costs estimates of the impacts of the restrictiveness indices that were reported in Table 2.

Table 2. Some estimates of price/cost impacts of services policies

Sector	Source and period covered	Measure	OECD countries			Developing countries		
			Simple average	σ	N	Simple average	σ	N
Maritime shipping	Clark, Dollar and Micco (2001); 2000	Percentage impact on shipping costs of mandatory use of certain port services	2.0	2.6	21	5.6	3.5	32
Air transport : economy fare	Doove et al. (2001); late 1990s	Estimated increase (%) in fares over an estimated “free trade” level for a set of bilateral routes	30.6	19.5	23	63.9	19.6	12
Air transport : APEX discount fare	Doove et al. (2001); late 1990s	Estimated increase (%) in fares over an estimated “free trade” level for a set of bilateral routes	8.9	4.4	23	16.8	3.5	12
Retail food distribution	Kalirajan (2000);	Impact on costs of barriers on foreign establishment	2.7	1.7	12	2.3	3.2	6
Retail banking	Kalirajan et al. (2000); 1996-97	Percentage impact on net interest margins of discriminatory policies	11.8	11.6	7 (a)	31.8	19.0	9
Engineering	Nguyen-Hong (2000); 1996	Impact of barriers to FDI on price cost margins (%)	5.2	4.1	14	8.4	4.3	6
Mobile telecom	Doove et al (2001); 1997	Price impact (%) of regulatory policies relative to a notional benchmark regime	26	27	24	21	15	18
International telecom	Doove et al (2001); 1997	Price impact (%) of regulatory policies relative to a notional benchmark regime	73	61	24	34	9	18

Notes: (a) Includes the EU-15 as one observation.

Source: Data compiled in part from tables reported in Deardorff and Stern (2006) and Dee (2005). The Doove et al. (2001) study draws extensively on the results of Boylaud and Nicoletti (2000) and Gönenç and Nicoletti (2000).

A number of the studies summarized in Table 2 do not focus on discriminatory policies; instead the focus is on the impact of regulation more generally. The various restrictiveness indices that have been constructed suggest there is significant variation in the estimated extent of discrimination against foreign providers. Given that such discrimination tends to be higher in the developing countries that are in the sample, estimated price and/or cost effects tend to be higher in those countries, and in most instances are significantly greater than the level of trade barriers observed for merchandise trade.

A challenge for the analysis of the effects of policies is to consider the relationships between modes of supply for a specific service and the price/cost impacts on margin services (producer service inputs). The potential implications of trade liberalization in services are tied closely to the mode of liberalization (establishment or cross-border trade) and to the underlying market structure. Because many services operate as margin sectors (facilitating exchange, such as banks in the savings-investment market and transport firms in the international goods market), the implications of liberalization are closely tied to gains from trade in other sectors (Francois and Wooton, 2006). From the perspective of quantifying trade barriers, much therefore depends on how policies impact on different modes of supply and whether these modes are complements or substitutes. If they are substitutes, a prohibitive policy on one mode may not have much effect if another mode can be used. If the unconstrained mode is the most efficient one, the policy is redundant in terms of its impact on trade. If it is not the first-best mode, the effect of the policy is equivalent to the difference in costs involved in shifting across modes, giving rise to standard deadweight losses. Conversely, if modes are complements, a very liberal policy with respect to one mode may “hide” the fact that in practice access is highly restricted.

Yet another challenge is to determine whether observed price-cost margins or estimated tariff equivalents reflect real costs (red tape) or rents. This is very important for the estimation of the welfare consequences of policy reform. Konan and Maskus (2006) note that policies that limit entry may have a *competition effect* – local firms charge price markups over marginal cost ($p_i = c_i(1 + \nu_i)$) – and a possible *cost inefficiency effect* – marginal costs may be higher if low-cost foreign suppliers are excluded from the market and local firms absorb red tape or resource-using service barriers λ_p , so that costs exceed global ‘best practice’: $c_i = c_i^*(1 + \lambda_p)$. The implication is that any observed wedge between price and true marginal costs depends on both an ad valorem markup and a proportionate waste factor.

If the policies generate real costs, removing them may give rise to much greater welfare gains than is the case if the policies generate rents that are captured by domestic agents. In the “waste” or real costs case, a policy that restricts the most efficient mode will not just generate

deadweight losses, but also a social cost equivalent to the amount consumed times the difference in cost entailed by the less efficient mode. In the “rent” case, policy reforms (liberalization) will mostly involve a redistribution of income across agents. Generally it will involve income being transferred away from producers to consumers, and transfers between factors of production. However, if there are rents there is also the possibility that policy reforms result in international transfers from domestic producers to foreign firms. This can easily arise in instances where liberalization is partial and is associated with entry by a few foreign firms into an imperfectly competitive domestic market. The extreme case is one where a domestic monopoly is transferred to foreign ownership without any change in market structure.³⁴ The importance of “rents vs. waste” is a well-known issue that is not specific to services regulation – e.g., it played an important role in estimates of the net gains from the EU Single Market program (Baldwin, 1994), and is a matter that has been the subject of much analysis in the public choice literature. The implication for empirical efforts to determine the effects of policy is that it is not enough to focus on price-cost margins as that does allow one to disentangle the two effects.³⁵

From a normative perspective, what matters of course are not the trade or investment effects of policies and policy reform but what such changes imply for economic growth and welfare. Two types of approaches have been used to do this – econometric studies and numerical general equilibrium modeling.³⁶

Services liberalization and economic growth

Economic theory postulates that growth is a function of increases in the quantity and productivity of capital and labor inputs. It accords no special role to services.³⁷ An important economic characteristic of many services is their “facilitating” role: services support ever-finer specialization. As argued by Francois (1990a), the growth of intermediation services is an important determinant of overall economic growth and development. Much of this

³⁴ There are variants on this theme that can also be important in practice. Burgess (1995) notes that if trade reform allows a shift from factor services employed domestically to imports of service products, and the former were taxed whereas the latter cannot be, welfare may decline. See also Findlay and Sidorenko (2003).

³⁵ Nguyen-Hong (2000) finds that nondiscriminatory regulations that restrict entry have a significant and negative effect on the price-cost margins of engineering firms, while discriminatory policies affecting foreign establishment and operation have a significant and positive effect on price-cost margins. This suggests that non-discriminatory regulations are likely to raise costs, while discriminatory policies (nationality or residency requirements) generate rents for domestic incumbents.

³⁶ Only examples of country-specific CGE analyses are included in this survey, reflecting both space constraints and a judgment that existing multi-country or multi-region models are best seen as illustrative and exploratory, given the limitations of the datasets that analysts have been forced to rely on. Noteworthy examples of the latter include Brown and Stern (2001), Dee and Hanslow (2000) and Dee et al. (2003).

³⁷ An exception is the literature stressing the importance of financial development for growth – see, e.g., Levine (1997). Other strands of the growth literature implicitly recognize services dimensions, e.g., the importance of human capital (and thus educational services) in generating (endogenous) growth.

intermediation activity facilitates transactions through space (transport, telecoms) or time (financial services) (Melvin, 1989). Francois argues that the increasing importance of producer services in modern (growing) economies reflects economies of scale and specialization. As firm size increases and labor specializes, more activity needs to be devoted to coordinating and organizing the core businesses of a company. This additional activity is partly outsourced to external service providers. Producer services therefore are not just differentiated inputs but play an important distinct role in coordinating the production processes needed to generate (differentiated) goods and to realize scale economies. The associated organizational innovations and expansion of “logistics” (network) services yields productivity gains that in turn should affect economy-wide growth performance by enhancing the efficiency of production in all sectors. The associated cost reductions result in an increase in overall total factor productivity of firms and the economy as a whole.³⁸ Such producer services may of course be provided by foreign firms as well as domestic firms, with entry by foreign firms also being a channel for technology diffusion.

Few empirical studies have investigated the linkages between services, services liberalization, and economic growth. Most of the literature has focused on the effects of specific services such as finance or infrastructure,³⁹ and not on the impacts of *foreign* provision of such services. In a cross-section cross-country regression analysis, Mattoo, Rathindran and Subramanian (2006) find that controlling for other determinants of growth, countries with open financial and telecommunications sectors grew, on average, about 1 percentage point faster than other countries. Fully liberalizing both the telecommunications and the financial services sectors was associated with an average growth rate 1.5 percentage points above that of other countries. Eschenbach and Hoekman (2006a) utilize three indicators of the “quality” of policy in banking, non-bank financial services and infrastructure, constructed by the EBRD spanning the period 1990-2004 to investigate the impact of changes in services policy, including liberalization, on economic performance over this period for a sample of 20 transition economies.⁴⁰ They find that changes in policies towards financial and infrastructure services, including telecommunications, power and transport, are highly correlated with inward FDI. Controlling for regressors commonly used in the growth literature, they conclude that measures of services policy reform

³⁸ See also Guerrieri et al. (2005) for a theoretical paper that includes the role of greater competition in producer services as a driver of economic growth, and Burgess and Venables (2004) on the importance of a variety of services “inputs” that support specialization, creation and diffusion of knowledge, and exchange.

³⁹ Recent empirical studies finding statistically significant and economically meaningful positive impacts of infrastructure on growth include Hulten, Bennathan and Srinivasan (2006) and Fedderke and Bogetic (2006).

are statistically significant explanatory variables for the post-1990 economic performance of the transition economies in the sample.

Eschenbach and Hoekman also note that if instead of the services policy indices, measures of the investment climate or governance indicators are used for the countries in the sample, similar results obtain. A possible implication is that the investment climate variables (rule of law, etc.) used in the recent empirical growth and development literature may in part be capturing services-related policies.⁴¹ For example, Dollar and Kraay (2002) find that institutional quality is highly correlated with trade, concluding that institutions and trade both matter for long-run growth; while Rodrik, Subramanian and Trebbi (2004) argue that institutions can promote trade integration, which itself has positive impact on institutional quality. More research to further “unbundle” institutions (Acemoglu and Johnson, 2005) to identify to what extent “institutions” are services-related and correlated with services-related policies could be very fruitful. Given that services policies can be directly influenced by governments, whereas it may be less obvious what can be done in the short run to improve “institutions” or “governance,” greater emphasis on collection of data on services policies could help identify the policy handles that should be targeted by policymakers.

Arnold, Javorcik and Mattoo (2006) analyze the effects of allowing foreign providers greater access to services industries on the productivity of manufacturing industries relying on services inputs. The results, based on firm-level data from the Czech Republic for the period 1998-2003, show a positive relationship between FDI in services and the performance of domestic firms in manufacturing. They conclude that the presence of foreign services providers as the measure of services policy is the most robust services variable affecting TFP in user firms. In related firm-level research focusing on Africa that uses data from over 1,000 firms in 10 sub-Saharan African economies, Arnold, Mattoo and Narciso (2006) also find a statistically significant positive relationship between firm performance (TFP) and the performance of three service input industries for which data was collected through enterprise surveys (access to communications, electricity and financial services).

Many of the sectoral papers discussed below conclude that policy reforms that increase competition and improve regulatory oversight result in improved performance of the industries concerned. In turn, the productivity of the services sector is important for the long-term growth

⁴⁰ The index focuses primarily on regulatory regimes and access to the markets concerned. The value of the policy indices range from zero to 4.3 and are set at zero for 1989, so that the 2004 value provides a measure of the progress that has been made by countries in converging to “best practice” standards.

⁴¹ Of course, services policies are part of the investment climate. In the EBRD dataset, however, they are distinct, in that the investment climate variable covers privatization, trade policies for goods, exchange rate policy, competition policy, corporate governance and price liberalization.

prospects of countries. While there is little empirical work investigating this link for developing countries, this has been shown for OECD countries. For example, Triplett and Bosworth (2000, 2004) calculate both labor and multifactor productivity for a range of US service industries. While there are serious measurement difficulties that afflict productivity measurement for many service industries (because it is often difficult to define the real output of a service sector), they conclude that US productivity growth has been significant for services. This suggests that the worries expressed by Baumol (1967) in his classic article are less relevant in today's world where technological changes are driving innovations in services as much, if not more, than in manufactures. Triplett and Bosworth (2004) note that during the 1990s some 19 million additional services jobs were created in the U.S., as opposed to stagnant growth in the goods-producing sector. Productivity growth in distribution and financial services fueled much of the post-1995 overall expansion in U.S. productivity, with information technology and managerial innovations – such as outsourcing and specialization, as well as new concepts of retailing such as the “big box” store format – helping to transform and accelerate productivity in these sectors.

Numerical model-based assessments of services liberalization

Konan and Maskus (2006), use a computable general equilibrium (CGE) model to investigate the potential effects of removing barriers to trade services in Tunisia. They argue that increasing international competition on service markets will reduce the “cartel effect”—the markup of price over marginal cost that incumbents are able to charge due to restricted entry; and attenuate what they term the “cost inefficiency effect”—the fact that in an environment with limited competition marginal costs of incumbents are likely to be higher than if entry were allowed. The latter is most important as inefficiency imposes a cost on all sectors and households that consume the services involved. They conclude that removing policies that increase costs can have much greater positive effects on national welfare than the removal of merchandise trade barriers – by up to a factor of seven or eight (see also Hoekman and Konan, 2001; Konan and Kim, 2004 and Jensen et al. 2005 for similar analyses). Instead of the “standard” 0.5 to 1 percent increase in real income from goods liberalization, introducing greater competition on services markets that removes cost inefficiencies raises the gains to 6-8 percent. These large potential effects of services liberalization reflect both the importance of services in the economy and the extent to which they tend to be protected.

The credence that should be placed in the numbers generated by CGE analyses depends very much on the validity of the modeling assumptions made and the data that are used. While the accuracy of the specific numbers generated is certainly open to question, the conclusion that

services liberalization can generate much larger welfare effects than goods liberalization is probably robust. However, as stressed by Konan and Maskus (2006), to be more informative, CGE analyses need to be able to draw on empirical research that determines the effects of policies on markups and costs.

An interesting conclusion emerging from Konan and Maskus (2006) is not only that gains from services liberalization may be greater than from goods liberalization, but the adjustment costs associated with service-sector reforms may be lower because of the absence of corner solutions: services will continue to be produced locally and thus generate demand for labor. While this is intuitive, less so is their finding that comprehensive reforms spanning both services *and* goods trade will generate less need for factors to be reallocated across industries than just goods liberalization alone. Given that in practice the focus of trade reforms has been on goods, not services, an implication is that past reform programs undertaken by many developing countries may have generated excessive adjustment, insofar as subsequent services liberalization will generate factor flows that may go in the opposite direction. Thus, their analysis has important implications for the sequencing of liberalization – it may be best to proceed on a broad front, targeting both goods and services markets.

Rutherford, Tarr and Shepotylo (2005) also employ a static CGE model to assess the impact on Russia of accession to the WTO. Their analysis is innovative in that all 55,000 households distinguished in the Russian Household Budget Survey are incorporated into their model, allowing assessments of the impacts on income distribution and the poor. Their analysis also includes FDI (mode 3) and incorporates Dixit-Stiglitz endogenous productivity effects in both the trade and poverty analysis. They conclude that in the medium term virtually all households would gain from liberalization, with increases in real incomes in the range of 2 to 25 percent of base year household income. These estimates are decisively affected by liberalization of FDI in business services sectors and endogenous productivity effects in business services and goods. The gains from FDI liberalization in services alone are 5.3 percent of the value of Russian consumption, and represent more than 70 percent of the total value of the potential gains from WTO accession-related reforms. The welfare gains from Russia's tariff reductions and better access to markets abroad would be equivalent to only 2 percent of consumption. Thus, as was found by Konan and Maskus for Tunisia, the most important component of potential welfare gains from liberalization are removal of barriers against FDI in services sectors. However, they also find that many households may lose in the short term, making it important to put in place effective safety nets to protect the poorest members of society during the transition.

Whalley (2004) assesses the extant quantitative literature that seeks to evaluate the potential impacts of global services trade liberalization, with a special focus on impacts on developing countries. He argues that a problem with the literature is that the heterogeneity of service activities is typically ignored in quantitative studies, even though this may have important implications for the effects of services trade liberalization. Whalley focuses on two central issues: the representation and measurement of barriers to services trade in individual countries, and the interpretation of results from model-based analyses quantifying the effect of trade liberalization in services. One of the issues stressed by Whalley – drawing on initial papers by Ryan (1990, 1992) – is that many services are “margin” or intermediation services. Liberalization of such sectors – such as banking – may be globally welfare reducing if there are transactions costs, as shown in numerical simulations by Chia and Whalley (1997) and Huang, Whalley and Zhang (2005). The welfare impacts from partial liberalization of intermediation services can be negative if it results in a fall in prices of goods and thus greater consumption and trade, and the associated increase in aggregate intermediation costs exceed the efficiency gains derived from lower “unit” intermediation costs. Huang et al. (2005) do not allow for FDI (factor mobility) – a mode that in practice will play an important role in international competition in services – but do consider the interaction between the existence of barriers to trade in goods and removal of barriers to trade in services that results in more efficient inter-temporal intermediation.

Thus, the basic message that emerges from the papers discussed above is that liberalization of services matters, perhaps much more than trade in goods, but that much depends on how well the characteristics and economic functions of different services are captured, the accuracy of estimated or assumed impacts on costs and prices of services, whether policies create rents or simply raise costs, and if there are rents, what share accrues to foreign factors.

3. Sectoral and ‘mode of supply’ studies

In-depth country-specific, time series analysis as well as sector-specific research is needed to inform both economy-wide and cross-country empirical analyses of the impacts of services liberalization. What follows discusses some of the studies that have been made in recent years.

Financial services

The importance of the financial sector for economic growth has long been documented. The empirical work on finance tends to use financial development indicators such as the size of the banking sector, the degree of private sector involvement in financial services, and cost measures

(interest rate spreads, etc.) as independent variables in growth regressions. Trade in financial services has not figured prominently until recently. One of the first papers to focus on the effects of barriers to financial services trade is Claessens, Demirgüç-Kunt and Huizinga (2001). They ask whether the entry of foreign banks makes domestic banks more competitive. Using bank-level data for 80 countries for 1988-95, including data on the extent of foreign ownership in national banking markets, they compare net interest margins, overhead, taxes paid, and profitability of foreign and domestic banks. They note that the comparative functions of foreign banks and domestic banks is very different in developing and industrial countries, possibly because of a different customer base, different bank procedures, and different regulatory and tax regimes. In developing countries foreign banks tend to have greater profits, higher interest margins, and higher tax payments than do domestic banks. In industrial countries it is the domestic banks that have greater profits, higher interest margins, and higher tax payments.⁴² Claessens, Demirgüç-Kunt, and Huizinga show that increasing the foreign share of bank ownership reduces profitability and overhead expenses in domestically owned banks. The number of foreign entrants matters more than their market share, suggesting that they affect local bank competition more on entry rather than after gaining a substantial market share. These effects hold even when controlling for the fact that foreign banks may be attracted to markets with certain characteristics, such as low banking costs.

Cho (1988) highlights some policy lessons from the opening of the Korean insurance market in the 1980s. Cho stresses the importance of market structure and policies that restrict competition, analyzing how the existence of limited competition in the Korean insurance market motivated efforts (successful) on the part of US companies to gain access to the market, in the process strengthening the coalition opposing more general (MFN) liberalization. This paper provides some empirical evidence for the theoretical framework developed in Francois and Wooton (2001a) to analyze the incentives for a domestic cartel confronting foreign pressure to open the market to competition to allow in only a few foreign firms.

Cummins and Rubio-Misas (2006) analyze the effects of deregulation and liberalization on consolidation in the Spanish insurance industry. Their sample period 1989-1998 spans the introduction of the European Union's Third Generation Insurance Directives, which was aimed at integration of the EU insurance market, through, *inter alia*, the adoption of a single EU license for insurers and home country supervision. This led to major changes in the Spanish insurance market: the number of firms in the industry declined by 35 percent and the average firm size

⁴² Berger et al. (2004) study the determinants of entry by foreign financial services providers and conclude that a mix of traditional comparative advantage and firm-specific assets can explain these findings.

increased by 275 percent. Cummins and Rubio-Misas estimate cost, technical, and allocative efficiency, as well as total factor productivity (TFP) change, and find that many small, inefficient, and financially under-performing firms were eliminated from the market due to insolvency or liquidation. They also document that acquirers in mergers and acquisitions selected relatively efficient target firms. The net result was that the market experienced significant growth in TFP.⁴³

Other analyses of trade in financial services include Barth, Caprio and Levine (2004), Eschenbach (2004), Kalirajan et al. (2000), Murinde and Ryan (2003), Claessens (2003), Dobson and Jacquet (1998) and the contributions to Claessens and Jansen (2000). This literature tends to find a positive link between financial sector openness and economic growth performance. Given that developing countries tend to have higher restrictions on foreign competition, this points to a significant potential growth bonus for developing countries who move from closed regimes toward regimes comparable (in terms of openness) to those of the OECD countries. What matters most is to ensure a contestable market – while foreign participation is an important source of new knowledge and products, benefits depend importantly on precluding the creation or maintenance of significant policy-based barriers to entry that create rents for incumbents.

Distribution services

Bandyopadhyay (1999) focuses on another “margin” or intermediation sector: distribution. In an empirical analysis of bilateral trade between OECD countries using a gravity model framework, he finds that distribution-related costs can have a significant impact on the volume of trade, and act as a barrier to trade (see also Rousslang and To, 1993). While Bandyopadhyay does not have direct information on the distribution sector per se – he relies on variables that pertain to infrastructure (the density of the road and rail network) and telecommunications (the number of lines per country) – the variables used can be regarded as inputs into distribution. What this analysis does not do is take into account the market structure variables that figure in the analysis of Francois and Wooton (2001b), suggesting that the effects found are likely to be underestimates.

Kalirajan (2000) develops a separate index of government restrictions on trade in distribution services as these affect domestic and foreign firms, and quantifies the extent to which regulation restricts domestic and international competition by using the constructed indices as additional regressors in a statistical estimation of price-cost margins in this sector across OECD countries. He concludes that policies appear to be mostly cost creating, with estimated cost increases ranging from 0 to 8 percent. That is, policies generate inefficiencies as opposed to rents, as regulation of operating conditions – employment, operating hours, size, etc.

⁴³ Barros (1995) is an earlier analysis of the effects of insurance market opening in Portugal that comes to similar

– increases real resource costs for business.⁴⁴ He is careful to stress that the variable used – price-cost margins – is an imperfect measure as it captures only the net effect of policies, and that the results are only suggestive given the small sample size (a cross section of 18 countries).

Bradford (2005) is a more recent analysis of the impacts of distribution margins in eight OECD countries – defined as the ratio between the value of output in producer and consumer prices for 124 products. The focus is on deriving an estimate of the specific distribution margins (including wholesale/retail trade and transportation) by explicitly controlling for the impacts of trade barriers on producer prices. His estimates range from a low of around 60 (i.e., 60 cents to move a dollar worth of output measured at world prices) for Canada, the Netherlands, the UK and the US to a high almost 100 for Japan. He uses a CGE model for 4 of these countries to assess the welfare impacts of inflated margins, running an experiment in which margins are reduced to the lowest level observed in the sample for each of the 124 products. Bradford’s simulations suggest that inefficiencies in distribution reduce imports and impose substantial welfare costs, the magnitude of which is similar to that caused by border trade barriers. As is stressed in other CGE papers that analyze the impact of services policies, the extent to which inflated margins reflect excess costs or are captured by domestic agents as rents is important. In the 50-50 case (assuming half of the excess margin generates rents), the simulation generates an increase in real income (equivalent variation) of 1.7 percent.⁴⁵

International maritime transport

Another important intermediation service – especially for international trade in goods – is maritime shipping.⁴⁶ This remains an industry characterized by a toleration of imperfect competition, reflected in exemptions from antitrust law for liner conferences, cargo reservation schemes, restrictions on foreign ownership of ports, and bans on foreign participation in cabotage. In assessing the implications of imperfect competition in international shipping for the gains from trade in goods, Francois and Wooton -(2001b) have concluded that, at the extreme, monopolization of trade routes can lead to up to half the gains from trade liberalization being lost as shippers increase prices to take advantage of increased market power (which follows from tariff reductions). The basic idea here is that a chain of services is required to complete the transactions that turn exports into imports at the dock and goods in the store. “Bottleneck”

conclusions.

⁴⁴ Dee (2006) notes that although regulation may also create rents for incumbents, these are likely to become capitalized into the cost of land.

⁴⁵ In a parallel paper, Bradford and Gohin (2006) calculate that a 10% reduction in Japan’s final goods distribution margins would benefit it as much as worldwide free trade would. In a finding similar to that of Konan and Maskus (2006), they also find that, compared to trade opening, reducing margins leads to smaller inter-sectoral production shifts and thus may engender less political opposition.

market power at any point in chain may affect the terms of trade – for example, shipping or airline “cartels.” Thus, market structure matters. Consumer prices are a function of tariffs and transport/shipper margins that depend on domestic costs and competition: $p_c = (1+t)(p_p + s)$. If t falls as a result of trade liberalization, shippers may capture part of the benefits, so that p_c falls less. Their simulations involve an assessment of relative gains, given variations in market structure in the shipping sector. In Africa, for example, their experiments suggest that monopoly in shipping implies that, with tariff reductions in export markets, the resulting welfare gains are only 50 percent of those realized if the shipping lines are competitive.

Fink, Mattoo and Neagu (2001) is an empirical analysis of the impact of maritime liner arrangements and private restrictive practices, as well as formal government policies that restrict the ability of foreign providers to supply shipping services and barriers to competition in the provision of port services on transport prices for goods shipped to the US from developing countries.⁴⁷ They conclude that private anticompetitive practices appear to have a larger effect on prices than government policies that restrict foreign competition, although the latter are also a statistically significant factor affecting prices. Port-related excess costs due to limitations on competition in port services account for one-third of the total potential gain from liberalization.⁴⁸

Telecommunications

Fink, Mattoo and Rathindran (2003) focus on the impact of policy reform in basic telecommunications on sectoral performance using a panel data set for 86 developing countries across Africa, Asia, the Middle East, Latin America and the Caribbean over the period 1985 to 1999. Telecommunications services have historically been provided through government monopolies and been an important source of state revenue. As a result of changes in telecommunications technologies the “natural monopoly” argument for state ownership or control has been eroded, and many countries now allow competition, but often restrictions are maintained on ownership and access to networks. Fink et al. analyze the impact of specific policy changes relating to ownership and competition on sectoral performance, as well as whether the sequence in which reforms are implemented affects performance. They find that both privatization and competition lead to significant improvements in performance, but that a comprehensive reform program, involving both of these policies supported by an independent

⁴⁶ Doove et al. (2001) analyze the impact of policies on prices of bilateral air transport routes. See Table 2.

⁴⁷ They focus only on international shipping and thus capture only part of the impact of policies on transport costs. Estimates of the price-increasing effect of the US Jones Act (which restricts maritime cabotage between US ports to US flag vessels) range from 100 to 300 percent of the average world price (Francois, et al., 1996).

⁴⁸ In a subsequent paper, Clark et al (2004), using the dataset developed by Fink et al. (2001) augmented with survey-based indicators of perceptions of port efficiency, conclude that port inefficiency-related costs account for a larger share of the total costs – and thus the potential gain from reform.

regulator, produced the largest gains: an 8 percent higher level of mainlines and a 21 percent higher level of labor productivity compared to years of partial and no reform. They also conclude that the sequence of reform matters: mainline penetration is lower if competition is introduced after privatization, rather than at the same time (see also Parker and Kirkpatrick, 2005 for evidence on the latter point).

Health services and insurance

Trade in health services is an example of mode 2 type transactions insofar as patients move to the location of providers for treatment. While other modes will surely also play a role – e.g., providers may want to establish a commercial presence (engage in FDI) or send health providers abroad on a temporary basis – there is great potential for expanding mode 2 trade. A barrier to such trade is the lack of portability of health insurance in OECD countries. For example, US federal or state government reimbursement of medical expenses is limited to certified facilities in the United States or in a specific U.S. state. This constraint is also significant because it deters elderly persons from retiring abroad. Those who do retire abroad are often forced to return home to obtain affordable medical care. The potential impact of permitting portability could be substantial. Mattoo and Rathindran (2006) find that extending health insurance coverage to overseas care for just fifteen types of tradable treatments could produce savings for the United States of over \$1 billion a year even if only one in ten American patients travel abroad. The lower costs of health services abroad offer the opportunity to extend medical benefits to people who currently are not insured.

Modes of supply-based analyses

An alternative to analyzing specific services is to focus on specific modes of supply. Most of the attention in the literature has centered on mode 3 – many of the papers already discussed focus on the effects of FDI restrictions, either implicitly or explicitly. Holmes and Hardin (2000) have calculated frequency indices for FDI policies of a subset of APEC economies for 15 service sectors for the 1996-98 period, determining relative restrictiveness by applying a weighting scheme that reflects their judgment of the efficiency costs of different policies. South Korea and the developing countries in the sample (Indonesia, the Philippines, Thailand) have the highest barriers to FDI in services; Hong Kong and the US the lowest. Unfortunately such data are not available for a broader set of countries and have not been compiled on a time series basis.

Perhaps the greatest potential gains from trade are associated with liberalization of mode 4 – temporary movement of service suppliers. Temporary movement offers arguably a partial solution to the dilemma of how international migration is best managed given the substantial

political resistance that exists against it in many high-income countries. It could allow the realization of gains from trade while addressing some of the concerns of opponents to migration in host countries, while also attenuating the brain drain costs for poor source countries that can be associated with permanent migration. Walmsley and Winters (2005) show that if OECD countries were to expand temporary access to foreign service-providers by the equivalent of 3 per cent of their labor force, the global gains would be greater than those associated with full liberalization of merchandise trade. Both developed and developing countries would share in these gains, and they would be largest if both high-skilled mobility and low-skilled mobility were permitted. There are of course large political obstacles that must be overcome for such mode 4-trade expansion to be feasible, but movement towards liberalization may be possible if designed appropriately. This is one area where the GATS could play a role, but more likely is that countries will continue to rely on bilateral arrangements to manage such trade.⁴⁹

The conclusion suggested by the empirical literature is that the potential gains from services trade and investment liberalization are substantial. While partial reforms may not be welfare-enhancing for reasons discussed previously, both theory and the evidence suggests that in practice benefits are likely to outweigh costs by a large margin especially if accompanied by goods trade liberalization, and that the potential gains from full services liberalization may well be several times that from goods liberalization. Insofar as the markets concerned are not competitive and policies prohibit new entry, opening up to competition (both foreign and domestic) should lead to large welfare improvements.⁵⁰ An important qualification to this presumption pertains to ensuring that the regulatory preconditions to ensure both equity and efficiency have been satisfied. As discussed below, this is a key concern for many governments, and a factor limiting the use that is being made of the GATS. An important question here concerns the sequencing of reforms. A case can be made that the weight of empirical evidence implies that domestic regulatory reform needs to be put ahead of removing policies that discriminate against foreign firms in that the former is likely to generate larger welfare payoffs. Many of the papers reviewed above conclude that what matters most in enhancing performance of a sector is competition in general, complemented by effective regulation.⁵¹ However, as

⁴⁹ See, e.g., Pritchett (2006). Mechanisms that could facilitate agreement to liberalize mode 4 trade are discussed in Mattoo and Carzaniga (2003) and in Mattoo (2005). The experience of Canada in managing temporary movement is discussed in Blouin (2005); Bhatnagar and Manning (2005) discuss developments in this area in ASEAN.

⁵⁰ One reason for this was pointed out by Romer (1994) – the economy will get access to products that were not available before, enhancing both consumer utility directly as well as a firm productivity through access to more specialized inputs.

⁵¹ In addition to the papers noted earlier, Gutierrez (2003) and Cubbin and Stern (2006) find a positive association between an index of regulatory governance and performance of the telecommunications and electricity supply

discussed below, from a negotiating perspective it is easier to focus on discriminatory policies – indeed, that is the traditional domain of trade talks. The same is true when it comes to privatization, where the evidence also suggests that competition matters more than ownership (Parker and Kirkpatrick, 2005). Insofar as domestic, nondiscriminatory policies matter more for efficiency and growth, there is a risk that the trade negotiating process may divert attention away from the policies that should be addressed on a priority basis at the domestic level.

4. The GATS: Genesis and State of Play

A major motivation for much of the literature on trade in services – whether theoretical or policy-oriented – was the launch of negotiations on trade in services in the GATT in 1986 (the Uruguay Round). Services have also become prominent in the context of regional integration agreements. The literature on negotiations on services and the GATS is large, and what follows makes no claim to be comprehensive.⁵² Drake and Nicolaidis (1992) discuss the genesis and intellectual foundations of the GATS. They survey much of the early policy-oriented literature, and document both the important role played by industry interest groups in pushing services on the negotiating agenda, and the role of epistemic communities in influencing the thinking and discussions of how to structure an international agreement.

Hoekman (1996) assesses the outcome of the Uruguay Round negotiations, briefly summarizes the main features of the GATS and discusses its strengths and weaknesses. He concludes that coverage of sector-specific commitments on national treatment and market access is limited, and that the GATS effectively was limited to partial “locking in” of policies that had already been implemented by Members on a unilateral basis. That is, the Uruguay Round did not deliver any actual liberalization.

The structure of commitments made by WTO members of services is complex, taking the form of a positive listing of sectors that are subject to market access and national treatment obligations, in each case being defined negatively: a commitment exists to provide market access and national treatment for a sector and a specific mode of supply only if no exceptions are scheduled. Even if a sector is scheduled – and Members may decide not to schedule a specific sector if they wish – complete freedom to restrict market access or national treatment may be retained by writing “unbound” into a cell – see Table 3. The implication is that schedules only provide incomplete information on prevailing policies. Only if a member writes “none” into its

industries in a sample of developing countries. See also Hogan (2002) on regulation and liberalization in the electricity sector.

schedule is there a binding commitment not to restrict market access and to abide by national treatment.

Table 3. Structure of a GATS schedule of specific commitments

Mode of supply	Conditions and limitations on market access	Conditions and qualifications on national treatment	Additional Commitments
1. Cross-border	Commercial presence required	Unbound	
2. Consumption abroad	None	None	
3. Commercial presence (FDI)	25% of management to be nationals	Unbound	Establishment of an independent regulator
4. Temporary entry of natural persons	Unbound, except as indicated in Horizontal Commitments	Unbound, except as indicated in Horizontal Commitments	

Notes: ‘None’ implies no exceptions are maintained– that is, a bound commitment not to apply any measures that are inconsistent with market access or national treatment. ‘Unbound’ implies no commitment of any kind has been made.

Empirical efforts to “quantify” the coverage of GATS have tended to use either a simple count of sectors/modes where commitments are made or employ a weighting scheme that is a function of the type of commitment made. Although it is unclear what “unbound” means – actual policy may be quite liberal in practice – in characterizing commitments this is not relevant: “unbound” means that there is no commitment. More difficult is how to weight the various restrictions that countries list across sectors and modes of supply. This is analogous to the problem affecting efforts to characterize the restrictiveness of national policy stances through indices. Although arbitrary, one simple and transparent way of weighting is to give a weight of zero to “unbound” type commitments; a weight of 1 to full commitments (i.e., “none” is scheduled in a specific cell of the matrix in Table 3), and a weight of 0.5 to commitments where restrictions are specified. This methodology was used by Hoekman (1995, 1996) and has been adopted and subsequently extended by numerous authors.

Table 4 illustrates the type of data that results for the EU. While specific indices are not economically meaningful, they do allow for cross-country comparisons and for monitoring of changes in commitments over time. Note that there is some variation in EU Members commitments, illustrating that the EU is not (yet) a customs union (Langhammer 2004).

⁵² See for example, the contributions to Messerlin and Sauvant (1990) and Sauvé and Stern (2000). Several chapters in Hoekman, Mattoo and English (2002) summarize the GATS and the state of play in the WTO. Sapir (1999) reviews the first 6 years of the GATS; Footer (2002) does so from a legal perspective.

Table 4. GATS Commitments by EU-15 Member States, by Mode of Supply

Mode:	Market Access				National Treatment				All
	1	2	3	4	1	2	3	4	
EU*	52.6	68.1	67.1	0.0	52.3	68.4	67.4	0.0	47.0
Belgium	51.0	68.1	64.2	0.3	51.0	68.4	67.4	1.0	46.4
Germany	51.6	66.8	65.5	1.0	50.3	67.7	67.1	0.6	46.3
Denmark	51.3	67.1	65.8	2.6	51.9	68.4	65.8	3.9	47.1
Spain	51.0	68.1	59.7	1.3	52.3	68.4	67.4	1.9	46.3
France	49.4	67.4	57.1	6.5	50.6	68.4	66.5	1.0	45.8
Greece	45.2	67.4	56.1	9.0	49.4	68.4	66.8	0.0	45.3
Italy	46.8	67.7	57.4	2.9	47.1	68.4	66.5	7.7	45.6
Ireland	50.6	68.1	63.5	0.0	51.0	68.4	67.4	0.0	46.1
Luxembourg	52.6	68.1	66.8	0.0	52.3	68.4	67.4	0.0	46.9
Netherlands	52.6	68.1	66.8	0.0	52.3	68.4	67.4	0.0	46.9
Portugal	43.5	67.7	51.0	2.9	49.0	68.4	67.1	4.2	44.2
UK	52.6	67.7	66.1	0.0	52.3	68.4	67.4	0.0	46.8
Austria	55.8	68.7	64.8	8.7	53.5	68.7	67.7	10.0	49.8
Sweden	47.4	60.0	50.0	0.6	48.1	60.0	53.5	1.9	40.2
Finland	51.3	58.7	52.3	0.6	52.6	58.7	56.8	36.1	45.9
Standard deviation	3.2	3.0	6.1	3.1	1.8	3.2	4.3	9.2	2.0
Mean	50.2	66.6	60.5	2.4	50.9	67.2	65.5	4.6	46.0

Source: Eschenbach and Hoekman (2006b).

Adlung and Roy (2005) update Hoekman's assessment of the coverage of commitments, and note that little progress was made in extending the coverage post-1995 – essentially limited to commitments by a number of countries to liberalize access to telecommunications markets. Most developing countries have commitments that are less comprehensive than those of the OECD countries, while recent WTO accession countries often have made the most far reaching commitments. For many developing countries the coverage of specific commitments is well below 50 percent of all services and modes of supply. Adlung and Roy also note that the provisional requests and offers made in the 6 years following the launch of new negotiations on services in 2000 did not suggest there was much interest in using the GATS as a vehicle to commit to actual liberalization of markets.⁵³

Both theory and empirical research summarized above suggest that from a development perspective services should be center stage in multilateral negotiations. The WTO can potentially help to improve services performance by inducing countries to liberalize access to markets or to (pre-)commit to doing so, thus increasing competition. An important question is how large the incentives are for countries to use the multilateral negotiation process/mechanisms. Hoekman and Messerlin (2000) question how much scope there is in the services context for traditional

⁵³ Barth et al. (2006) combine data on specific GATS commitments for financial services with measures of actual policy in this sector for 123 countries drawn from Barth, Caprio and Levine (2006). They conclude that in practice applied policy is much more liberal than what was committed to in the GATS.

reciprocity-driven market access negotiations given the importance of regulatory policies and the fact that inefficient service industries generate costs for downstream users in many sectors. This suggests that unilateral reform incentives may be larger than for trade in goods. With the exception of EU members, in practice most reforms that have been implemented by countries have been autonomous. Hoekman and Messerlin (2000) also argue that reciprocity can play less of a role if export interests are weak and non-border protection is dominant. The former implies that in many developing countries opposition to reform may be difficult to counterbalance by firms seeking better access to foreign service markets; the latter implies that trade negotiators have less obvious focal points and may lack the information needed to employ the tools of their trade in a manner that guarantees the outcome is welfare improving.

This suggests that attention should focus on strengthening and maintaining a robust capacity for identifying, understanding and designing the *domestic* regulatory reforms that need to be undertaken in services in order to enhance the efficiency of the economy and bolster economic growth prospects. Multilateral negotiations and institutions may be used as a facilitating device to support the process of implementing the reforms, even if they are not able to drive reform. Dee (2005) argues that the empirical evidence suggests that putting national treatment first – focusing on discriminatory policies – will at best reap trivial gains, and could generate losses if the sequencing of reforms is not appropriate (on the latter see also Fink et al. 1998). Given the request-offer dynamics that drive trade negotiations, there are also dangers of a welfare-reducing outcome for the types of reasons analyzed by Cho (1988), Francois and Wooton (2001a) and others: trading partners may be more interested in sharing the rents created by policy than in pushing for free entry and efficient regulation.

However, this is not to deny that there may be a good political economy rationale for pursuing both services liberalization and regulatory reforms through trade agreements, in addition to the standard market access rationale. One reason is identical to that the case for goods liberalization – to overcome resistance to welfare-improving reforms by those currently benefiting from restrictive policies. Another is that trade agreements can be a vehicle for improving key dimensions of regulation and helping to prevent regulatory capture, through both surveillance and setting rules of the game that make such capture less likely– e.g., a requirement that regulators be independent. Trade agreements may also be used by reform-minded governments as a focal point for reforms.⁵⁴

⁵⁴ There is very little formal analysis of the political economy of services trade negotiations. Fung and Siu (2006) is an exception.

The strategy pursued by China in the context of its accession to the WTO illustrates how trade negotiations can be used to good national advantage. As documented by Mattoo (2004), China's services commitments made during its WTO accession negotiations represented a radical reform program. China promised to eliminate most restrictions on foreign entry and ownership, as well as most forms of discrimination against foreign firms. Realizing the potential gains from this liberalization will require the implementation of complementary regulatory reform. Mattoo (2004) highlights three issues: (i) the fact that initial restrictions on the geographical scope of services liberalization could encourage sub-optimal agglomeration of economic activity that may not be completely reversible by subsequent country-wide liberalization; (ii) remaining limitations on foreign ownership, even if temporary, may dampen the incentives of foreign investors to improve firm performance; and (iii) improving prudential and pro-competitive regulation in key sectors such as financial services, basic telecommunications and other network-based services. These matters, especially the last, apply to all countries.

Regulatory objectives and regulatory freedom

Many observers have expressed concerns that the GATS will deprive regulators of the ability to achieve social objectives. This is a factor explaining the reluctance of many countries to make new commitments or expand on existing ones. The challenge is to achieve a balance between greater competition by improving market access for foreign providers and preserving desirable regulatory freedom.

Kirkpatrick and Parker (2005) focus on the law and economics of one of the most sensitive sectors: environmental services, specifically water distribution.⁵⁵ Their discussion is motivated by concerns that liberalization of water services under the GATS would severely restrict the ability to regulate and ensure delivery of services in the pursuit of public policy objectives such as universal service, and that increased private provision would result in a concentration of new investment and services delivery on higher-income consumers in urban areas and higher prices. They assess the available evidence relating to the interface between the domestic regulation of water services, national experiences with liberalization and GATS rules on environmental services, and conclude that liberalization (and thus specific commitments to that effect in the GATS) should be conditioned on having in place an appropriate regulatory

⁵⁵ Chanda (2003) and Lang (2004) are complementary discussions of social or public services, Cossy (2005) on water services and the GATS. Kirkpatrick, Parker and Zhang (2006) is an empirical analysis of the performance of private provision of water that concludes there is no evidence that private firms in this sector perform better than state-owned firms.

framework and the capacity to implement it. They also call for greater ex ante assessments of the likely benefits and costs of policy changes in this sector.

Krajewski (2003) and Adlung (2006) are in depth discussions of GATS rules and disciplines for public services. The scope of GATS disciplines in this area is of some concern to both governments and many NGOs. Governments can and do reserve specific activities for provision by the State – in principle providing a mechanism for precluding private provision of certain services. GATS Art. I:3(b) states that the GATS does not apply to measures affecting trade in services “supplied in the exercise of governmental authority.” There is some uncertainty what this means and there is little agreement in the relevant literature. Most studies take the view that in practice many “public” services will fall within the sectoral coverage of the GATS and that the implied constraints on policy therefore remain limited as long as governments do not make market access commitments in the areas concerned. However, since the transparency and predictability effects associated with such commitments may help to attract investment and to expand sector segments that are open to private participation (e.g., language training or higher education), a question remains whether and how governments can commit to access conditions in some segments without compromising their ability to exercise their “governmental authority” in others (e.g., primary and secondary education).

Evans (2003) focuses on another sector where regulation is prominent: energy services. As in other service industries, there has been a shift from government planning and control in the energy sector toward greater competition and private ownership and investment. However, domestic regulations continue to create unnecessary and costly impediments to the supply of energy services on a competitive non-discriminatory basis. Evans argues that the GATS classification system and disciplines needs to be augmented to allow for assurances for third party access to essential facilities, regulatory transparency, competition safeguards, and independent regulation, and that a precondition for deeper energy services trade commitments is to safeguard the right of governments to pursue environmental protection, energy efficiency, security and other public policy objectives.

The accountancy industry, discussed by Trollet and Hegarty (2003), provides another illustration of the tension between regulation and liberalization, as the latter is conditional on governments accepting/recognizing each other’s regulatory regimes. Accountancy was one of the professional services that became the focus of a work program under GATS auspices after the conclusion of the Uruguay Round, which was intended to lead to additional, deeper commitments upon reaching agreement on stronger multilateral disciplines as regards domestic regulation – such as qualification requirements, standards and licensing procedures. Trollet and

Hegarty discuss the experience of the Working Party, which among other things established guidelines for mutual recognition agreements in the accountancy sector in 1998. They conclude that the WTO/GATS has not been a force for liberalization in this sector, in part because there has not been any focus on defining a positive agenda for reform. A precondition for the GATS to work as a “lock-in” device is that there is first agreement on a framework of regulatory principles, which they argue should be developed elsewhere.⁵⁶ This raises an important more general question: whether the WTO is the appropriate forum to discuss regulatory standards, or whether this is a subject that is better addressed in other international fora.

Dispute settlement and enforcement

A major role of the WTO is enforcement of negotiated commitments through dispute settlement. There were two major services disputes during 1995-2005, as well as a number of goods trade disputes that had services dimensions. The latter are discussed by Zdouc (1999) and Millan-Smitmans (2000). They summarize the options for settling disputes, the relationship between GATT and GATS, as well as more specifically the Bananas litigation, as well as other early cases where the GATS was invoked. The Bananas case had a major “services” dimension in that much of the dispute revolved around the access to the distribution system involved in getting fruit from point of production to the consumer (Josling and Taylor, 2004). The case illustrates again that even in goods trade, services-related policies may be more important than tariffs and related border barriers.

Mavroidis and Neven (2006) focus on a dispute brought by the US against Mexico. The case centered on the conditions under which foreign telecom operators could terminate calls in Mexico. The first case to involve only GATS provisions, it was also the first to deal with telecommunication services and the rules agreed in the so-called Reference paper on pro-competitive regulatory principles. The US argued that the Mexican regulation of termination charges was not in conformity with the obligations contained in the Reference paper in that, *inter alia*, termination charges were not cost oriented and that Mexico had set up a cartel of telecom operators. The authors briefly describe the Mexican regulations in dispute and the relevant provisions of the Reference paper, and then go on to analyze whether and how termination charges are covered by the Reference paper. They are critical of the framework of analysis constructed by the panel on this issue, noting that the panel effectively interpreted the GATS agreement as imposing a discipline on *exports*. They also argue that the interconnection

⁵⁶ See Maijoor et al. (1998) for an analysis and discussion of the European experience in liberalization of audit services.

provision of the Reference paper is applied by the panel to a market for which it was not designed (essential facilities); that the criterion used to determine if the termination fees charged by Telmex were cost-oriented – long run average incremental cost – is open to question; that it is not clear that cartels fall within the scope of the reference paper; and that the panel’s interpretation of what is “anti-competitive” behavior is not fully consistent with antitrust practice.

Pauwelyn (2006) discusses the second GATS dispute, a complaint by Antigua and Barbuda concerning US policies that prohibit foreign suppliers from offering gambling and betting services to US consumers over the Internet. The US had made a mode 1 commitment in the sector that includes gambling services, so that market access restrictions such as import quotas or limitations on the number of service suppliers are in principle prohibited. The question was whether this precluded the US from banning the provision of the service on a non-discriminatory basis, i.e., through domestic regulation. Pauwelyn argues that a domestic regulation should not be regarded as a market access restriction simply because it has the effect of banning certain imports. The Appellate Body ruled that regulatory measures that have the effect of a zero quota fall under the prohibited market access restrictions, given that the US had made a mode 1 commitment. Pauwelyn worries that this may well mean that the validity of domestic services regulation, including non-discriminatory, is threatened. If so, the result could be to undermine the regulatory autonomy of WTO Members beyond what was foreseen by negotiators. In practice, however, this is an overstated concern in that there are other provisions that could have been – but were not – invoked by the US to justify a nondiscriminatory ban on internet gambling, such as the GATS general exceptions provision, Art. XIV.

What these cases reveal is that the implications of existing rules and commitments are not necessarily clear, and that the rule-making agenda may be as if not more important than the market access agenda.⁵⁷ Both cases involved the US, the first as the plaintiff, the second as the respondent. Noteworthy is that in the second case the plaintiff was an extremely small country, illustrating the importance of the WTO DSU for such countries – it is very unlikely that Antigua would have been able to get the attention of the US on the matter through bilateral channels. While this is clearly a major positive dimension of the WTO framework, it remains a mercantilist body. One implication of this is that very small countries are much less likely to be the subject of disputes. This may reduce the value of WTO membership for small countries.

⁵⁷ Mattoo (1997) is an early discussion of the implications of the fact that national treatment in the GATS extends to suppliers as well as service products.

Eschenbach and Hoekman (2006b) analyze the extent to which the EU-15 and 16 transition economies used the GATS to commit to service sector policy reforms. National GATS commitments are compared with the evolution of actual policy stances over time. While there is substantial variance across transition economies on both actual policies and GATS commitments, they note that many of the transition economies that did not have a prospect of joining the EU made far-reaching commitments both in terms of breadth of sectoral coverage and depth (absence of limitations). These dwarf even those of the most “ambitious” developed countries, something which in part is a reflection of the fact that many of the ECA countries concerned acceded to the WTO after 1995. They find an “inverse relationship” between the depth of GATS commitments and the “quality” of actual services policies as assessed by the private sector. In part this can be explained by the fact that the prospect of EU accession made the GATS less relevant as a commitment device for many of the transition countries concerned. However, for many of the non-EU accession candidates the WTO seems to be a weak commitment device. A possible explanation is that the small size of the markets concerned generates weak external enforcement incentives. Their findings suggest greater collective investment by WTO members in monitoring and transparency is needed to increase the benefits of WTO membership to small countries.

Political Economy Questions

Jara and Carmen Dominguez (2005) and Mattoo (2005) discuss the services negotiating agenda in the Doha Round. A precondition for achieving progress in such negotiations is that participants identify a set of broad goals that make sense from an economic perspective, provoke engagement from the business community, and satisfy the overall mercantilist constraint of ensuring a “balance of concessions”. Mattoo argues that such a balance could be achieved by limiting commitments to measures that discriminate (pre- and post-entry) against foreign providers of services – as opposed to seeking disciplines that also target measures that do not discriminate – that is, generally applicable sectoral regulation. Making national treatment the primary discipline covering all forms of *de jure* and *de facto* discrimination (pre- and post-establishment) would cover many of the most important prevailing restrictions, although it runs the risk of exacerbating the tendency noted above that trading partners may seek to share rents rather than push for free entry and competition on markets. It also raises a question of how to treat barriers to mode 1 trade, as these will tend to be nondiscriminatory.

Since the entry into force of the GATS, there have been several sectoral negotiations and work programs aimed at further elaboration of specific rules in areas, such as e-commerce and

domestic regulation, mostly matters on which agreement was not possible during the Uruguay Round. Among such issues three are particularly prominent: disciplines on the use of safeguards, subsidies and government procurement. Little progress was made in these various areas before the launch of the Doha Round in 2001, and in principle all outstanding issues became the subject of negotiation in the Doha Round. The status quo on these subjects, the challenges that confront negotiators and options for moving forward are discussed by Sauvé (2002).⁵⁸

A major challenge in negotiating international disciplines on services-related policies is to define meaningful commitments that will be beneficial to the countries that undertake them *and* be of value from a mercantilist negotiating perspective. A problem here is that not only do the poorest countries have weak export interests in most services, they confront particularly high barriers in the one mode that is of export relevance to them – mode 4. While much of the research literature suggests most of the potential gains will come from domestic reforms, many developing countries will not be of much export interest to large players in the WTO. Moreover, successful liberalization in these countries will often require substantial strengthening of domestic regulatory institutions and infrastructure.

These considerations suggest mercantilist bargaining may not do much to improve outcomes in many of the poorest countries. Arguably additional instruments are needed that focus attention on the policies that are most detrimental. One such instrument is what has come to be called “aid for trade”. Such aid can help ensure that regulatory preconditions for liberalization to be beneficial are satisfied. By adding an additional instrument – development assistance – to the table, the GATS could become much more relevant as a mechanism to promote not just services liberalization but, more importantly, to bolster and improve domestic reform in services. Hoekman and Mattoo (2006) argue that the WTO has a potential role to play in assisting governments to address the domestic reform agenda in low-income countries by helping to identify these needs and using its “commitment and monitoring technologies” to mobilize both liberalization *and* assistance. Specifically, they argue that if WTO members were to expand the transparency mandate of the organization to make the WTO a focal point for multilateral discussions and assessments of the state of members’ service sectors, the institution could do much to help address the needs of its poorer members. It could do so by raising the policy profile of the services agenda in poor countries, helping governments identify where development assistance is needed, and monitoring the delivery and effectiveness of such assistance.

⁵⁸ Analyses of these issues can also be found in several of the contributions to Stern and Sauvé (2000) as well as in Hoekman (1993).

5. Services and Regional Trade Agreements

International cooperation on trade in services is not limited to the GATS. Regional agreements to liberalize international transactions in services became more prominent starting in the late 1980s. Examples include the Canada-United States Free Trade Agreement, the Australia-New Zealand Closer Economic Relations trade agreement (CER), and the North American Free Trade Agreement (NAFTA). Of course, the deepest regional effort to integrate services markets is the EU. Starting in the 1990s numerous additional agreements were negotiated that include services.

As noted by Panagariya (2000), the extensive theoretical literature on trade agreements essentially ignores services – the focus is on border barriers that apply to trade in goods. And, while FDI is increasingly considered, no distinction tends to be made between services and other forms of FDI. Fink and Mattoo (2004) is one of the few papers to focus explicitly on services and RIAs. They examine the implications of unilateral policy choices in a particular services market and identify the circumstances in which a country is more likely to benefit from cooperation in a regional rather than multilateral forum. They conclude that compared to the *status quo*, a country is likely to gain from preferential liberalization of services trade at a particular point of time, in contrast to the more ambiguous conclusions emerging for goods trade. The main reason is that barriers are often prohibitive and not revenue generating, so there are few costs of trade diversion. Insofar as there is scope for increased competition and exploitation of scale economies, as well as the possibility of inducing knowledge spillovers, the presumption that a country would gain from a RIA in services is strengthened.

Hoekman and Sauvé (1994) survey the early vintage agreements and compare their coverage and disciplines, while Stephenson (2002) and Roy, Marchetti and Lim (2006) cover subsequent arrangements and efforts to liberalize services markets on a regional basis. A question that motivates much of the ever-expanding literature is whether regional agreements and the multilateral process are complementary or substitute paths to liberalizing services markets. Hoekman and Sauvé argue that the question is moot insofar as it appears that many regional agreements do not do much more than the GATS. They note that in some dimensions there are fairly significant architectural differences between agreements. While in the GATS national treatment and market access are not general obligations, they are in many RIAs. Another major difference is the approach taken towards determining sectoral coverage. The CER, NAFTA and subsequent US bilaterals take a negative list approach to coverage (i.e., all services are covered unless they are explicitly excluded in an annex); whereas the GATS uses a positive list approach (i.e., obligations apply only to listed services). While either approach can lead to the same liberalization outcome given that non-conforming measures

may be scheduled (grandfathered) under a negative list approach, the latter is significantly more transparent by forcing Parties to reveal all non-conforming measures and excluded sectors.

Overall, Hoekman and Sauvé (1994) conclude that there was not much evidence that RIAs – outside the EU – were going significantly beyond what was being negotiated in the GATS in the early 1990s. Roy, Marchetti and Lim (2006) come to the same conclusion as far as the substance of the disciplines (rules) that are included in more recent vintage agreements, of which there are many. However, they note that recent RIAs – see Table 5 for a listing of RIAs covering services reported to the WTO since 2000—tend to have sectoral coverage that greatly exceeds the commitments the countries involved made in the GATS, both existing GATS commitments and the offers that were on the table in the Doha round as of mid 2006 when the talks were suspended. They also find that RIAs that involve the US have the most comprehensive coverage and deepest levels of commitments.

Stephenson (2002) also argues that more recent vintage RIAs have gone significantly beyond the GATS in delivering much greater market openness for partner country service providers, and that much of this may subsequently be extended via the WTO. Time will tell to what extent this optimism is justified. Developments in Latin America on the FTAA, the fact that RIAs have not been very successful in addressing disputes in services (witness the Telmex case discussed earlier), the resistance inside the EU to fully liberalizing intra-EU services trade, and the length of time it has taken EU members to open intra-EU trade in services, all illustrate that the challenges to services liberalization may not be that much easier to address regionally than multilaterally. It continues to be the case that most services policy reforms tend to be implemented unilaterally. Thus, the question of what value is added by international cooperation remains an open one.

Dee (2006) focuses on the RIAs that have been proliferating in Asia, and investigates whether recent RIAs have tended to target regulatory restrictions that discriminate explicitly against foreigners, and if so, if these are the restrictions that matter most, in an economic sense. Focusing on banking, distribution, ports, professions, telecommunications, air passenger transport, and electricity generation, she argues that because the RIAs covering services are preferential, they liberalize only the trivial services trade barriers. That is, they do not deal with the policies that result in the greatest markup of prices over costs (i.e., rents) – which tend to be nondiscriminatory regulatory policies.

Table 5: Post-2000 Preferential Trade Agreements that include Services

PTA	Entry into Force	Date of Signature	WTO Notification	Negative or Positive List?	GATS-type Market Access Obligation for Mode 3?
New Zealand – Singapore	Jan. 2001	Nov. 2000	Sept. 2001	Positive List	Yes
EFTA – Mexico	Jul. 2001	Nov. 2000	Aug. 2001	Positive List	Yes
EC – Mexico	Mar. 2001	Oct. 2000	June 2002	Positive List	Yes
Chile – Costa Rica	Feb. 2002	Oct. 1999	May 2002	Negative List	No (nor for mode 1)
Japan – Singapore	Nov. 2002	Jan. 2002	Nov. 2002	Positive List (Japan used negative list for mode 3 NT).	Yes
Singapore – Australia	Jul. 2003	Feb. 2003	Oct. 2003	Negative List	Yes
US – Chile	Jan. 2004	June 2003	Dec. 2003	Negative List	Yes
US – Singapore	Jan. 2004	May 2003	Dec. 2003	Negative List	Yes
Chile – El Salvador	June 2002	Oct. 1999	Mar. 2004	Negative List	No (nor for mode 1)
Republic of Korea – Chile	April 2004	Feb. 2003	April 2004	Negative List	No (nor for mode 1)
EC-Chile	Mar. 2005	Nov. 2002	Nov. 2005	Positive List	Yes
EFTA – Singapore	Jan. 2003	June 2002	Jan. 2003	Positive List	Yes
China – HKC	Jan. 2004	Sep. 2003	Jan. 2004	Positive List (for China)	Yes
China – Macao China	Jan. 2004	Oct. 2003	Jan. 2004	Positive List (for China)	Yes
EFTA – Chile	Dec. 2004	June 2003	Dec. 2004	Positive List	Yes
US – Australia	Jan. 2005	Aug. 2004	Dec. 2004	Negative List	Yes
Thailand – Australia	Jan. 2005	Jul. 2004	Jan. 2005	Positive List	Yes
Panama – El Salvador	April 2003	March 2002	April 2005	Negative List	No (neither for mode 1)
Japan – Mexico	April 2005	Sep. 2004	April 2005	Negative List	No (neither for mode 1)
US – Bahrain	Aug. 2006	Sep. 2004	-----	Negative List	Yes
US – Oman	-----	Jan. 2006	-----	Negative List	Yes
US – CA + DR	Mar. 2006	Aug. 2005	Mar. 2006	Negative List	Yes
US – Morocco	Jan. 2006	June 2004	Jan. 2006	Negative List	Yes
US – Peru	-----	April 2006	-----	Negative List	Yes
Japan – Malaysia	-----	Dec. 2005	-----	Positive List	Yes
Korea – Singapore	Mar. 2006	Aug. 2005	Feb. 2006	Negative List	No
US – Colombia	-----	Feb. 2006 (conclusion of negotiations)	-----	Negative List	Yes
Singapore – India	-----	June 2005	-----	Positive List	Yes

Source: Roy, Marchetti and Lim (2006).

Achieving regional liberalization of services markets is difficult. The experience of the EU – by far the deepest regional initiative to date – is illustrative. To a large extent the 1992 Single market initiative revolved around actions aimed at integrating services markets. Numerous papers have documented how national regulatory regimes continue to segment EU services markets. For example, Maijoor, Buijink, Meuwissen and Van Witteloostuijn (1998) note how differences between national auditing regulations limit intra-EU trade in audit services, whether through cross-border establishment of auditors, cross-border provision of audit services; or cross-border control of an audit firm. All these types of trade are affected by regulations defining qualifications, competition between auditors or audit firms, and the control of such firms, with the latter types of regulatory barriers being the most important barrier to trade. That said, progress in other regional agreements is much less than in the EU. Park (2002), for example, employs a cross-section gravity analysis of services trade flows and finds that the EU is the only RIA where intra-RIA (bilateral) trade is more than predicted. For other Agreements such as Mercosur, NAFTA, and the Andean pact, trade in services is less than what would be predicted. But even in the EU there is still much scope for further liberalization of trade in services.⁵⁹

Langhammer (2005) documents one dimension of this – the EU is still not a customs union when it comes to services policies. Indeed, it is not even a free trade area. Langhammer uses the EU's GATS commitments and the offers the EU put on the table in the Doha Round to assess the extent to which there are still differences between national trade and investment regimes across service sectors. These are found to be significant, although full implementation of the EU offer would move the Community closer towards achievement of the customs union objective.

Kox and Lejour (2006) analyze the impact of policy heterogeneity inside the EU in creating trade and investment costs for service firms doing business in other countries. Service providers have to comply with different rules in each foreign market where they operate. Complying with these regulations causes fixed market-entry costs, specific for each export market. They develop an indicator for bilateral policy heterogeneity – based on the OECD dataset reported in Nicoletti (2001) and Nicoletti and Scarpa (2003) – which is used

⁵⁹ This is also the conclusion of Lejour and Palma Verheijden (2004) who compare the intensity of intra-EU trade in services with that observed in Canada and find that trade in the latter is two times higher as a share of GDP than in the former. The policies that can help explain these results are discussed in Commission of the European Communities (2002).

as a proxy for the costs of policy heterogeneity. They then explain bilateral services trade and services FDI in the EU using a gravity model augmented with their policy heterogeneity indicator. They find a strong negative impact of policy heterogeneity costs on services trade and FDI. The empirical results are used for assessing the potential impacts of the Services Directive proposed in 2004 (Commission of the European Communities, 2004), which would have reduced policy-related market-entry costs for services providers. Kox and Lejour project that the original 2004 Services Directive could increase intra-EU services trade by 30% to 62% and direct investment in services by 18% to 36%. The revised directive that was adopted in 2006 is unlikely to have such effects given that key aspects of the initial proposal – in particular acceptance of home country regulation – were removed.⁶⁰

In principle, similar types of potential gains could be generated by countries joining the EU, or adopting specific parts of the EU *acquis communautaire* for a given sector or policy area in the context of initiatives such as the European Neighborhood Policy. For example, Badinger and Breuss (2005) estimate the extent of the pro-competitive effects of Austria's accession to the EU, using a markup estimation method. They found significant markup reductions for wholesale and retail trade; financial services and real estate. Presumably this reflects the impact of accession on regulatory barriers to trade in these sectors.⁶¹ Francois (2005) investigates the implications of EU accession for regulatory reform in Turkey, focusing in particular on the transportation sector. For this sector, the primary objective of EU policy is the application of competition rules and state aid disciplines, harmonization of infrastructure, vehicle, environmental, and other standards; development of logistics networks; and improvement of border crossings and trade facilitation, as well as liberalization of all modes of transport. Francois explores both the quantitative and qualitative implications of Turkish accession to the EU for the transport sector. He adopts an innovative methodology to determine how far Turkey is from “best practice” as defined by OECD “standards” for this sector—not just in the regulatory domain but also in terms of “performance.” In part, this involves applying numerical estimates of the economy-wide and sector-specific impacts of accession on the transport sector. This is complemented by an assessment of the prevailing regulatory regime, using factor analysis to identify

⁶⁰ Saint-Paul (2005) develops a theoretical model that illustrates the possible political economy rationales for the political resistance to the “mode 4” liberalization that would have resulted from adoption of the “Bolkenstein” directive, stressing the role of imperfect (segmented) labor markets.

commonalities across countries and regulations. Francois concludes that accession is unlikely to exert significant pressure on Turkey to restructure as a result of either general market access conditions or regulatory convergence requirements.

6. Conclusion

The literature on trade in services has grown significantly since the late 1980s. The factors that determine trade and investment flows, the effects of such flows, their importance and the types of policies that affect them are now much better understood. That said, the current state of knowledge still leaves much to be desired. Much uncertainty continues to prevail regarding the determinants of trade in services, the extent to which countries restrict trade and the impact of past or prospective liberalization – the magnitude of (potential) net gains, their distribution, and the associated adjustment costs.

The lack of comparable cross-country, time series data on services output and prices, the limited availability of bilateral trade and investment flow statistics, and the very patchy coverage of data on “foreign affiliate trade in services” and mode 4 transactions explain the paucity of empirical research and policy analysis. The fact that most statistical resources continue to go towards the measurement of goods producing sectors is an anachronism. Time series, bilateral data on trade in goods is available for thousands of product categories. In contrast, comprehensive datasets on the origin and destination of trade in services – for whatever mode of supply – does not exist for any level of aggregation. The same is true for information on policies affecting services trade and investment. Given that services generate some 20 (40) percent of total foreign exchange flows at the global level if modes 3 and 4 are ignored (included), this would appear to be a misallocation of statistical resources. A concerted, internationally cooperative effort to rectify this situation through the launching of surveys to collect data on a regular basis is a precondition for more rigorous empirical analysis. Progress has been made on the methodological front in the last 20 years, including the development of an international manual and methodology to collect services trade statistics. What is needed now is implementation—which in turn will depend on advocacy from and willingness by the private sector to support such a global venture.

⁶¹ They found little impacts on the markups of other sectors, except mining and quarrying.

Services can be an engine of export growth for some countries – India may be an example – but more important is that they are a key determinant of the competitiveness of all firms in open economies, no matter what they produce. The services content of goods will keep rising with economic growth, as more and more of the value of any product is associated with inputs at the upstream and downstream ends of the production chain, not the manufacturing process per se – R&D, finance, design, marketing, distribution, product/brand management, etc. Even countries with comparative advantage in goods – manufacturing, agriculture – need to ensure that domestic services industries are efficient and their firms have access to foreign services know-how. Relatively little research has been done on the interaction between services policies, the availability of new or cheaper services, and the productivity of firms and farms in countries. The extent to which services access and use is a determinant of TFP at the firm level is generally not known. The same is true as regards the magnitude and direction of spillovers and backward linkages resulting from greater FDI and trade in services. Nor do we know much about the role of services (and services policies) in expanding product variety more generally and diversifying the export bundle of countries – something the recent trade literature has identified as potentially important for growth (Feenstra and Kee, 2004a,b).

The sectoral studies reveal that it makes little sense to speak of “the service sector.” Different services play different roles in the economy, will have very different market structures, and rely on (require) different modes of supply in contesting foreign markets. An implication for economy-wide modeling and analysis of policy reform is that these idiosyncrasies must be taken into account. From a trade perspective it is necessary to better understand the interactions between various modes of supply for specific services (mode 3 and mode 4 in accounting; modes 1 and 3 for off-shoring of back office services, all four modes for health services, etc.), as this will determine in practice which policies are a binding barrier to trade and which are redundant. More generally, such knowledge is needed to identify the appropriate sequencing and design of reforms.

One area where progress is being made, but much remains to be done, is to enhance the “services content” of CGE models, especially the multi-country/region models used to analyze the ex ante impacts of (global) policy reforms or shocks. These mostly do not include services trade or investment, in part as the result of absence of data on services transactions and in part due to weak data on policies. In parallel to improving data, work is

needed to more appropriately model services sectors, allowing for product differentiation and firm heterogeneity, and to better characterize the intermediation role played by some services. A first step would be to extend recent country-specific models that include services FDI and trade in producer services to a multi-country framework.

More research on the relative importance of policies that discriminate against foreign providers as opposed to domestic regulation that applies to all firms whatever their nationality is another priority. Both theory and much of the existing empirical work suggest that the latter is likely to be the more important source of inefficiency/costs – the associated “rectangles” may be much larger than the “triangles” generated by the efficiency losses from discriminatory policies. An implication is that it does not suffice to limit the focus to the calculation of “tariff equivalents” implied by a given set of (discriminatory) policies. In contrast to trade in goods, the focus needs to be on both “border” price wedges and the cost-raising impacts of policies. This is an important question from a national policy reform perspective, but also has implications for international cooperation. Insofar as trade agreements do not or cannot address nondiscriminatory regulatory policies that raise costs/lower national welfare, the focus must turn to mechanisms that increase knowledge of such effects so as to build support for domestic reforms. Indeed, if it is true that trade agreements may be more of diversion than a useful focal point for governments, this is very important to document. More empirical work that determines the extent to which trade agreements focus on “marginal” policies from a welfare perspective would have the added benefit of potentially shifting scarce negotiating attention to higher value activities – whether services-related or not.

Turning to discriminatory policies, greater consideration and analysis of the impact of—and rationale for—restrictions on inward FDI, both entry (ownership) limitations and operating requirements, would be valuable. Despite the worldwide liberalization of FDI that has occurred in the last two decades, policies often remain restrictive as regards equity (ownership) limits. While there is some research that suggests such restrictions are costly, in imperfectly competitive markets there are legitimate concerns regarding who captures excess profits (rents). In a related vein, more empirical work is needed to determine the extent to which firms engage in anticompetitive practices and/or government policy supports supra-normal profits in an industry. This ties into the need to identify the extent to which policies create rents as opposed to raising real costs.

Eschenbach and Hoekman (2006a) suggest that there may be a high degree of overlap between measures of institutional and governance quality used in the empirical growth literature and services policies. Services policies are of course a determinant of the investment climate of developing countries. How much can be done through a focus on services policies to improve survey-based measures of institutional quality is an important matter for research, as governments can change services policies, whereas it is inherently more difficult to determine how to improve institutions or governance.

Very little research has been done on the political economy of services trade and policy reforms. Although various authors have noted that the political economy should differ in some dimensions – reflecting the more limited tradability of services and the associated need for local production/factor demand even after liberalization, as well as the fact that services will often be inputs into production – much will depend on the extent to which there are rents associated with specific policies. Thus, the limited information available on “rents versus real costs” also has implications for the design of policy reform. Given the technological feasibility of using mode 1, much will depend on the modes being liberalized and the regulations affecting the use of alternative modes. Finally, the feasibility of liberalization may depend on the flexibility of labor markets or financial sector reforms/policies – e.g., access to credit. The likely payoff to both theoretical and empirical research on the political economy of services policies and policy reform is high.

Political economy factors will also determine the “need” for trade agreements to promote better domestic services policies. Both the GATS and most RIAs covering services are of recent vintage. A fundamental challenge confronting governments is to make trade agreements more relevant to the needs of firms and consumers in member countries. As always with (discriminatory) trade agreements, there is a tradeoff between increasing the “ownership” of (support for) agreements and maximizing national welfare. This tension is probably greater for services than for goods because of the prevalence of imperfectly competitive markets and thus the potential for rents.

To date the available, limited, evidence suggests that with the exception of the EU most services policy reform has been unilateral. The contribution of the GATS to services reform has been negligible.⁶² The more recent vintage RIAs have greater sectoral coverage

⁶² An exception as far as GATS is concerned are countries that acceded to the WTO post-1995, which have tended to make more commitments, some of which imply actual or prospective liberalization. However, the

than the GATS, in part reflecting the use in a number of RIAs of a negative list approach to coverage. Such an approach also generates greater transparency regarding the policies that are being kept in place that discriminate against foreign providers. However, how much discipline RIAs impose, whether in terms of required policy changes “on paper” or in terms of actual implementation, is not known, making it difficult to argue that in practice specific RIAs live up to what theory “predicts” they achieve: a lock-in device, credibility of reform, etc. Very little information also exists on the implementation of agreements, including whether RIA commitments are applied on a discriminatory basis to apply only to Members.

In services markets, access and regulation are closely intertwined. In many markets the key need is to reform regulatory policies that impede contestability. Whether this can be facilitated through trade agreements is still very much an open question. Services are activities where there is often need for some type of regulation to address market failures or achieve social (noneconomic) objectives. Moreover, technological developments have major implications for the design of appropriate regulatory instruments to ensure both efficiency and equity. Many of the ‘backbone’ services that are critical for the competitiveness of firms in a country—such transport, energy, and telecommunications—are industries with important network externalities. An implication is that regulation to ensure that markets are contestable needs to focus not only on ‘traditional’ types of entry barriers—outright bans, licensing, etc.—but on the ability to connect to the network at a reasonable price, apply the relevant technologies, etc. Designing and enforcing policies to achieve this is anything but trivial, suggesting a cautious approach towards the setting of enforceable international standards in trade agreements is justified.

References

- Acemoglu, Daron and Simon Johnson. 2005. “Unbundling Institutions,” *Journal of Political Economy*, 113(5): 949-95.
- Adlung, Rudolf. 2006. “Public Services and the GATS,” *Journal of International Economic Law* forthcoming.
- Adlung, Rudolf and Martin Roy, 2005. “Turning Hills into Mountains? Current Commitments Under the General Agreement on Trade in Services and Prospects for Change,” *Journal of World Trade*, 39:1161-1194.
- Amiti, Mary and Shang-Jin Wei. 2005. “Fear of Service Outsourcing: Is It Justified?” *Economic Policy* 20(42), 308-47.

findings of Eschenbach and Hoekman (2006b) suggest that care is needed in assuming that GATS commitments translate into actual liberalization insofar as the incentives to enforce commitments made by small countries may be weak.

- Anderson, J. and E. van Wincoop, 2004, "Trade costs," *Journal of Economic Literature*, XLII: 691-751.
- Arnold, Jens Matthias, Beata Javorcik and Aaditya Mattoo, 2006, "The productivity effects of services liberalization: Evidence from the Czech Republic," World Bank, mimeo.
- Arnold, Jens Matthias, Aaditya Mattoo and Gaia Narciso. 2006. "Services inputs and firm productivity in Sub-Saharan Africa: Evidence from firm-level data," World Bank, mimeo.
- Badinger, Harald and Fritz Bruess. 2005. "Has Austria's Accession to the EU Triggered an Increase in Competition? A Sectoral Markup Study," *Empirica* 32:145-80.
- Baldwin, Robert and Fukunari Kimura. 1998. "Measuring U.S. International Goods and Services Transactions," in R.E. Baldwin, R.E. Lipsey and J.D. Richardson (eds.), *Geography and Ownership as Bases for Economic Accounting*. University of Chicago Press (NBER), 9-36.
- Bandyopadhyay, Usree. 1999. "Trade and the Distribution Sector: Some Evidence from OECD Countries", *Canadian Journal of Economics* 32: 1299-1312
- Barros, Pedro. 1995. "Conduct Effects of Gradual Entry Liberalization in Insurance," *Journal of Regulatory Economics*, 8:45-60.
- Barth, James, Gerald Caprio and Ross Levine. 2004. "Bank Regulation and Supervision: What World Best?," *Journal of Financial Intermediation* 13:205-48.
- Barth, James R., Gerald Caprio, and Ross Levine. 2006. *Rethinking Bank Regulation Till Angel Govern*. New York:: Cambridge University Press.
- Barth, James, Juan A. Marchetti, Daniel E. Nolle, and Wanvimol Sawangngoenyuan. 2006. "Foreign Banking: Do Countries' WTO Commitments Match Actual Practices?," mimeo.
- Baumol, William. 1967. "Macroeconomics of Unbalanced Growth," *American Economic Review* 57: 415-26.
- Beck, Thorsten. 2002. "Financial Development and International Trade: Is There a Link ?" *Journal of International Economics* 57, 107-131.
- Berger, A, C. Buch, G. DeLong and R. DeYoung. 2004. "Exporting Financial Institutions Management via FDI, Mergers and Acquisitions," *Journal of International Money and Finance* 23:333-66.
- Bhagwati, Jagdish N. 1984a. "Splintering and Disembodiment of Services and Developing Nations," *The World Economy*, 7, 133-144.
- Bhagwati, J. 1984b. "Why are Services Cheaper in Poor Countries," *Economic Journal* 94, 279-86.
- Bhagwati, Jagdish 1987, "Trade in Services and the Multilateral Trade Negotiations," *The World Bank Economic Review*, 1: 549-69.
- Bhagwati, Jagdish, A. Panagariya and T.N. Srinivasan. 2004. "The Muddles over Outsourcing," *Journal of Economic Perspectives*, 18:4: 93-114.
- Bhattarai, Keshab and John Whalley. 2003. "The Division and Size of Gains from Liberalization in Service Networks," mimeo.
- Bhatnagar, Pradip and Chris Manning. 2005. "Regional Arrangements for Mode 4 in the Services Trade: Lessons from the ASEAN Experience," *World Trade Review* 4(2): 171-99.
- Blades, Derek. 1987. "Goods and Services in OECD Countries," *OECD Economic Studies*, 8, 159-84.
- Blouin, Chantal. 2005. "Liberalizing the Movement of Services Suppliers: Lessons from the Canadian Experience with Temporary Worker Programmes," *Journal of World Trade* 39(5): 881-94
- Boddewyn, J., M. Halbrich and A. Perry. 1986. "Service Multinationals: Conceptualization, Measurement and Theory," *Journal of International Business Studies* 17(3) 41-57.
- Boylaoud, Olivier and Giuseppe Nicoletti, 2000. "Regulation, Market Structure and Performance in Telecommunications," OECD Economics Department Working Paper 237.
- Bradford Jensen, J. and Lori Kletzer. 2005. "Tradable Services: Understanding the Scope and Impact of Services Outsourcing," IIE Working Paper 05-9.
- Bradford, Scott. 2005. "The Welfare Effects of Distribution Regulations in OECD Countries," *Economic Inquiry*, 43(4), 795-811.
- Bradford, Scott and Alexandre Gohin. 2006. "Modeling Distribution Services and Assessing Their Welfare Effects in a General Equilibrium Framework," *Review of Development Economics* 10(1): 87-102.

- Brown, Drusilla, and Robert M. Stern, 2001, "Measurement and Modeling of the Economic Effects of Trade and Investment Barriers in Services," *Review of International Economics*, 9: 262-86.
- Buch, Claudia and Alexander Lipponer. 2004. "FDI vs. Cross-Border Financial Services: The Globalization of German Banks," Deutsche Bundesbank Discussion Paper 05/2004.
- Burgess, David. 1989. "Services as Intermediate Goods: The Issue of Trade Liberalization," in Ronald Jones and Anne Krueger (eds.) *The Political Economy of International Trade*. Oxford: Basil Blackwell.
- Burgess, David. 1995. "Is Trade Liberalization in the Service Sector in the National Interest?," *Oxford Economic Papers* 47(1), 60-78.
- Burgess, Robin and Venables, Anthony J., 2004. "Toward a Microeconomics of Growth," World Bank Policy Research Working Paper No. 3257.
- Chanda, Rupa. 2003. "Social Services and The GATS: Key Issues and Concerns," *World Development* 31(12): 1997-2011.
- Chia, N.C. and John Whalley. 1997. "A Numerical Example Showing Globally Welfare Worsening Liberalization of International Trade in Banking Services," *Journal of Policy Modeling* 19: 119-27.
- Cho, Yoon Je. 1988. "Some Policy Lessons from the Opening of the Korean Insurance Market," *World Bank Economic Review*, 2, 239-54.
- Claessens, Stijn. 2003, 'Regulatory Reform and Trade Liberalization in Financial Services,' in A. Mattoo and P. Sauvé, (eds.) *Domestic Regulation and Service Trade Liberalization*, Washington, D.C.: The World Bank and Oxford University Press.
- Claessens, Stijn and Marion Jansen (eds.), 2000. *The Internationalization of Financial Services*, Kluwer.
- Claessens, Stijn, Asli Demirgüç-Kunt and, Harry Huizinga and, 2001. "How Does Foreign Entry Affect Domestic Banking Markets?," *Journal of Banking and Finance*, 25, 891-911.
- Clark, Ximena, David Dollar and Alejandro Micco. 2004. "Port Efficiency, Maritime Transport Costs and Bilateral Trade," *Journal of Development Economics* 75(2): 417-50.
- Commission of the European Communities. 2002, "Report from the Commission to the Council and the European Parliament on the State of the Internal Market for Services," Brussels.
- Commission of the European Communities. 2004, "Proposal for a Directive of the European Parliament and of the Council on Services in the Internal Market," SEC(2004) 21, Brussels.
- Cossy, Mireille. 2005. "Water Services at the WTO," in Edith Brown Weiss et al. (eds.), *Fresh Water and International Economic Law*. Oxford: Oxford University Press.
- Cubbin, John and Jon Stern. 2006. "The Impact of Regulatory Governance and Privatization on Electricity Industry Generation Capacity in Developing Countries," *World Bank Economic Review* 20(1):115-41.
- Cummins, J. David and Maria Rubio-Misas. 2006. "Deregulation, Consolidation and Efficiency: Evidence from the Spanish Insurance Industry," *Journal of Money, Credit and Banking*, 38(2), 323-55.
- Davis, Don and David Weinstein. 2001. "An Account of Global Factor Trade," *American Economic Review* 91(5):1423-53.
- Deardorff, Alan. 1985. "Comparative Advantage and International Trade and Investment in Services," in Robert Stern (ed.), *Trade and Investment in Services: Canada-U/S; Perspectives*. Toronto: University of Toronto Press.
- Deardorff, Alan. 2001. "International Provision of Trade Services, Trade and Fragmentation," *Review of International Economics* 9: 233-48.
- Deardorff, Alan and Robert Stern. 2006. "Empirical Analysis of Barriers to International Services Transactions and the Consequences of Liberalization," in R. Stern, A. Mattoo and G. Zannini (eds.), *A Handbook on International Trade in Services* Oxford: Oxford University Press, forthcoming.
- De Vany, Arthur, et al. 1983. "Production in a Service Industry Using Customer Inputs: A Stochastic Model," *Review of Economics and Statistics*, 65, 149-53.
- Dee, Philippa. 2005. "A Compendium of Barriers to Trade in Services," Australian National University, mimeo.

- Dee, Philippa. 2006. "East Asian economic integration and its impact on future growth," *The World Economy*, forthcoming.
- Dee, Philippa and A. Sidorenko. 2006. "The Rise of Services Trade: Regional Initiatives and Challenges for the WTO," in Christopher Findlay and Hadi Soesastro (eds.), *Reshaping the Asia-Pacific Economic Order*. London: Routledge.
- Dee, Philippa and Kevin Hanslow, 2001, "Multilateral Liberalization of Services Trade," in Robert M. Stern, (ed.), *Services in the International Economy*, University of Michigan Press, Ann Arbor.
- Dee, Philippa, Kevin Hanslow and Tien Phamduc 2003, "Measuring the Costs of Barriers to Trade in Services," in Takatoshi Ito and Anne Krueger (eds.), *Trade in Services in the Asia-Pacific Region*, Chicago: University of Chicago Press.
- Djankov, Simeon, Caroline Freund and Cong S. Pham. 2006. "Trading on Time," World Bank, mimeo.
- Dobson, Wendy and Pierre Jacquet. 1998, *Financial Services Liberalization in the WTO*, Washington, D.C., Institute for International Economics.
- Dollar, David and Aart Kraay (2002). "Institutions, Trade, and Growth." *Journal of Monetary Economics*. 50: 133-162.
- Doove, S., O. Gabbitas, D. Nguyen-Hong and J. Owen. 2001. "Price Effects of Regulation: International Air Passenger Transport, Telecommunications and Electricity Supply," Productivity Commission Staff Research paper. Canberra: Ausinfo.
- Drake, William and Kalypso Nicolaidis. 1992. "Ideas, Interests, and Institutions: 'Trade in Services' and the Uruguay Round," *International Organization*, 46, 37-100.
- Erramilli, M. and C.P. Rao. 1993. "Services firms' international entry mode choice: A modified transactions costs approach," *Journal of Marketing* 57(3): 19-38.
- Eschenbach, Felix. 2004. *The Impact of Banks and Asset Markets on Economic Growth and Fiscal Stability* Rotterdam: Erasmus University Press.
- Eschenbach, Felix and Bernard Hoekman. 2006a. "Services Policy Reform and Economic Growth in Transition Economies, 1990-2004," *Review of World Economics*, forthcoming.
- Eschenbach, Felix and Bernard Hoekman. 2006b. "Services Policies in Transition Economies: On the EU and WTO as Commitment Mechanisms," *World Trade Review* forthcoming.
- Ethier, Wilfred and Henrik Horn. 1991. "Services in International Trade," in E. Helpman and A. Razin (eds.), *International Trade and Trade Policy*. Cambridge, MA: MIT Press.
- Evans, Peter. 2003. Strengthening WTO Member Commitments in Energy Services: Problems and Prospects," in A. Mattoo, and P. Sauvé, (eds.) *Domestic Regulation and Service Trade Liberalization*, Washington, D.C.: The World Bank and Oxford University Press, 167-89.
- Fedderke, Johannes and Zeljko Bogetic. 2006. "Infrastructure and Growth in South Africa: Direct and Indirect Productivity Impacts of 19 Infrastructure Measures," World Bank Policy Research Working Paper 3989.
- Feenstra, Robert and Hiau Looi Kee. 2004a. "On the Measurement of Product Variety in Trade," *American Economic Review* 94:145-49.
- Feenstra, Robert and Hiau Looi Kee. 2004b. "Export Variety and Country Productivity," NBER Working Paper 10830.
- Feketekuty, Geza. 1988. *International Trade in Services: An Overview and Blueprint for Negotiations*. Cambridge MA: Ballinger Publications.
- Findlay, Christopher and A. Sidorenko, 2003. *Regulation and Market Access*, Asia Pacific Press.
- Findlay, Christopher and Tony Warren (eds.) 2000. *Impediments to Trade in Services: Measurement and Policy Implications*. Sydney: Routledge.
- Fink, Carsten and Aaditya Mattoo. 2004. "Regional Agreements and Trade in Services: Policy Issues," *Journal of Economic Integration*, 19(4), 742-79.
- Fink, Carsten, Aaditya Mattoo and I. Neagu. 2001. "Trade in International Maritime Services: How Much Does Policy Matter?," *World Bank Economic Review* 16(1), 81-108
- Fink, Carsten, Aaditya Mattoo and Cristina Neagu. 2005. "Assessing the impact of communication costs on international trade," *Journal of International Economics*, 67(2), 428-445.

- Fink, Carsten, Aaditya Mattoo and Randeep Rathindran, 2003, "An Assessment of Telecommunications Reform in Developing Countries," *Information Economics and Policy* 15(4), 443-66.
- Footer, Mary. 2002. "The General Agreement on Trade in Services: taking stock and moving forward," *Legal Issues of Economic Integration* 29, 7-25.
- Francois, Joseph. 1990a. "Producer Services, Scale and the Division of Labor," *Oxford Economic Papers* 42: 715-29.
- Francois, Joseph. 1990b. "Trade in Producer Services and Returns Due to Specialization Under Monopolistic Competition," *Canadian Journal of Economics*, 23, 109-24
- Francois, Joseph. 2005. "Accession of Turkey to the EU: Market Access and Regulatory Issues," in B. Hoekman and S. Togan (eds.), *Turkey: Economic Reform & Accession to the European Union*. Washington DC: World Bank and CEPR, 123-46.
- Francois, Joseph and Miriam Manchin. 2006. "Institutional Quality, Infrastructure and the Propensity to Export," mimeo.
- Francois, Joseph and Kenneth Reinert. 1996. "The Role of Services in the Structure of Production and Trade: Stylized facts from Cross-Country Analysis," *Asia-Pacific Economic Review*, 2: 35-43.
- Francois, Joseph and Ian Wooton, 2001a, "Market Structure, Trade Liberalization, and the GATS," *European Journal of Political Economics* 17: 389-402.
- Francois, Joseph and Ian Wooton. 2001b. "Trade in International Transport Services: The Role of Competition," *Review of International Economics* 9(2): 249-61.
- Francois, Joseph and Ian Wooton. 2006. "Market Structure and Market Access," mimeo.
- Francois, Joseph, Hugh Arce, Kenneth Reinert and Joseph Flynn. 1996. "Commercial Policy and the Domestic Carrying Trade; A General Equilibrium Assessment of the Jones Act," *Canadian Journal of Economics*. 29(1):181-98.
- Freund, Caroline and David Weinhold. 2002. "The Internet and International Trade in Services," *American Economic Review* 92(2), 236-40.
- Freund, Caroline and David Weinhold. 2004. "The Effect of the Internet on International Trade," *Journal of International Economics* 62:171-89.
- Fuchs, Victor. 1968. *The Service Economy*. New York: Columbia University Press.
- Fung, K.C. and Alan Siu. 2006. "The Political Economy of Service Trade Liberalization," University of Hong Kong, mimeo.
- Giarini, Orio (ed.), 1987. *The Emerging Service Economy*. New York: Praeger.
- Giersch, H. (Ed.), 1988. *Services in World Economic Growth*. Tubingen: J. Mohr.
- Gönenc, Rauf and Giuseppe Nicoletti, 2000. "Regulation, Market Structure and Performance in Air Passenger Transportation," OECD Economics Department Working Paper 254.
- Griffiths, B. 1975. *Invisible Barriers to Invisible Trade*. London: MacMillan.
- Grossman, Gene and Henrik Horn. 1988. "Infant-industry Protection Reconsidered: The Case of Informational Barriers to Entry," *Quarterly Journal of Economics*, 103, 767-87
- Grubel, H. 1987: "All Traded Services are Embodied in Materials or People," *The World Economy*, 10(3), 319-330.
- Guerrieri, Paolo, Bernardo Maggi, Valentina Meliciani and Pier Carlo Padoan. 2005. "Technology Diffusion, Services and Endogenous Growth in Europe: Is the Lisbon Strategy Useful?," IMF Working Paper 05/103.
- Gutierrez, L. 2003. "The Effect of Endogenous Regulation on Telecommunications Expansion and Efficiency in Latin America," *Journal of Regulatory Economics* 23(3): 257-86.
- Harris, R.G. 1995. "Trade and Communication Costs", *Canadian Journal of Economics*, November.
- Harker, Patrick Ed. 1995. *The Service Productivity and Quality Challenge*. Dordrecht: Kluwer.
- Helpman, Elhanan and Paul Krugman. 1985. *Market Structure and International Trade*. Cambridge: MIT Press.
- Hill, T.P. 1977: 'On goods and services', *The Review of Income and Wealth*, 23, 315-338.
- Hindley, Brian. 1988. "Service Sector Protection: Considerations for Developing Countries," *World Bank Economic Review* 2:205-24.

- Hindley, Brian and Alasdair Smith. 1984. "Comparative Advantage and Trade in Services," *The World Economy*, 7, 369-90.
- Hirsch, Seev. 1989. "Services and Service Intensity in International Trade," *Weltwirtschaftliches Archiv*, 125, 45-60.
- Hoekman, Bernard. 1990. "Services-related Production, Employment, Trade, and Foreign Direct Investment: A Global Perspective," in Patrick Messerlin and Karl Sauvant (eds.), *The Uruguay Round: Services in the World Economy*. Washington D.C: The World Bank.
- Hoekman, Bernard. 1993. "Safeguard Provisions and International Agreements Involving Trade in Services," *The World Economy*, 16:29-49.
- Hoekman, Bernard. 1995. "Tentative First Steps—An Assessment of the Uruguay Round Agreement on Services," in *The Uruguay Round and the Developing Economies*. World Bank Discussion Paper Series No. 307, Washington DC.
- Hoekman, Bernard. 1996. "Assessing the General Agreement on Trade in Services," in Will Martin and L. Alan Winters (eds.), *The Uruguay Round and the Developing Countries*. Cambridge: Cambridge University Press, 88-124.
- Hoekman, Bernard. 2000. "The Next Round of Services Negotiations: Identifying Priorities and Options," *Federal Reserve Bank of St. Louis Economic Review*, July/August.
- Hoekman, Bernard. 2006. "Trade in Services, Trade Agreements and Economic Development: A Survey of the Literature," CEPR Discussion Paper.
- Hoekman, Bernard, and Carlos A. Primo Braga. 1997. "Protection and Trade in Services: A Survey." *Open Economies Review* 8 (3): 285–308
- Hoekman, Bernard and Denise Konan. 2001. "Deep Integration, Nondiscrimination and Euro-Mediterranean Free Trade," in Jürgen von Hagen and Mika Widgren (eds.), *Regionalism in Europe: Geometries and Strategies After 2000*, Kluwer Academic Press.
- Hoekman, Bernard and Aaditya Mattoo. 2006. "Services, Economic Development and the Doha Round: Exploiting the Comparative Advantage of the WTO," CEPR Discussion Paper 5628.
- Hoekman, Bernard and Patrick Messerlin. 2000. "Liberalizing Trade in Services: Reciprocal Negotiations and Regulatory Reform," in Pierre Sauvé and Robert Stern (eds.), *Services 2000: New Directions in Services Trade Liberalization*, Washington D.C.: Brookings Institution, 487-508.
- Hoekman, Bernard and Kamal Saggi. 2003. "National Treatment and the Choice between Exports and Direct Investment," *Topics in Economic Analysis & Policy* (Berkeley Electronic Press), vol. 3, no. 1. At: <http://www.bepress.com/bejeap/topics/vol3/iss1/art13>.
- Hoekman, Bernard and Pierre Sauvé. 1994. "Regional and Multilateral Liberalization of Trade in Services: Complements or Substitutes?," *Journal of Common Market Studies*, 32, 283-317.
- Hoekman, Bernard, Aaditya Mattoo and Philip English (eds.), 2002, *Development Trade and the WTO: A Handbook*, Washington DC: World Bank.
- Hogan, William. 2002. "Electricity Market Restructuring: Reforms of reforms," *Journal of Regulatory Economics* 21(1): 103-32.
- Holmes, Leanne and Alexis Hardin. 2000. "Assessing Barriers to Services Sector Investment," in C. Findlay and T. Warren (eds.), *Impediments to Trade in Services*. Routledge.
- Horn, Henrik and Shy, Oz. 1996. "Bundling and International Market Segmentation," *International Economic Review* 37(1), 51-69.
- Huang, Hui, John Whalley and Shunming Zhang. 2005, "Trade Liberalization in A Joint Spatial Inter-Temporal Trade Model," mimeo.
- Hulten, Charles, Esra Bennathan and Sylaja Srinivasan. 2006. "Infrastructure, Externalities, and Economic Development: A Study of the Indian Manufacturing Industry," *World Bank Economic Review*, 20(2): 291-308.
- Inman, Robert P (ed.), 1985. *Managing the Service Economy: Prospects and Problems*. New York: Cambridge University Press.

- Jara, Alejandro and M. del Carmen Dominguez. 2005. "Liberalization of Trade in Services and Trade Negotiations," *Journal of World Trade*, 40(1): 113-27.
- Jensen, Jesper, Thomas Rutherford and David Tarr (forthcoming), "The Impact of Liberalizing Barriers to Foreign Direct Investment in Services: The Case of Russian Accession to the World Trade Organization," *Review of Development Economics*.
- Jones, Ronald and Frances Ruane. 1990. "Appraising the Options for International Trade in Services," *Oxford Economic Papers*, 42, 672-87.
- Jones, Ronald and Henryk Kierzkowski. 1990. "The Role of Services in Production and International Trade: A Theoretical Framework," in Ronald Jones and Anne Krueger (eds.), *The Political Economy of International Trade*. Oxford: Basil Blackwell.
- Josling, Timothy and T. Taylor. 2003. *Banana Wars: The Anatomy of a Trade Dispute* Oxford: CABI Publishing.
- Kalirajan, K. 2000, "Restrictions on Trade in Distribution Services," Productivity Commission Staff Research Paper (Canberra: Ausinfo).
- Kalirjan, K., G. McGuire, D. Nguyen-Hong and M. Schuele. 2000. "The Price Impact of Restrictions on Banking Services, in C. Findlay and T. Warren (eds.), *Impediments to Trade in Services: Measurement and Policy Implications*. London: Routledge.
- Karsenty, Guy. 2000, "Assessing Trade in Services by Mode of Supply", in P. Sauvé and R.M. Stern, eds., *GATS 2000: New Directions in Services Trade Liberalization*, Washington, D.C.: Brookings Institution Press, pp. 33-56.
- Key, Sydney. 2003. *The Doha Round and Financial Services Negotiations* Washington DC: American Enterprise Institute.
- Kikuchi, T. and T. Ichikawa. 2002. "Congestible Communication Networks and International Trade," *Canadian Journal of Economics*, 35: 331-40.
- Kirkpatrick, Colin and David Parker. 2005. "Domestic Regulation and the WTO: The Case of Water Services in Developing Countries," *The World Economy* 1491-1508.
- Kirkpatrick, Colin, David Parker and Yin-Fang Zhang. 2006. "An Empirical Analysis of State and Private-Sector Provision of Water Services in Africa," *World Bank Economic Review* 20(1): 143-63.
- Konan, Denise and Karl Kim. 2004. "Beyond Border Barriers: The Liberalization of Services Trade in Tunisia and Egypt," *The World Economy* 27(9), 1429-47.
- Konan, Denise and Keith Maskus. 2006. "Quantifying the Impact of Services Liberalization in a Developing Country," *Journal of Development Economics*, 81: 142-62.
- Kox, Henk and Arjan Lejour. 2006. "The Effects of the Services Directive on Intra-EU Trade and FDI," *Revue Economique*, forthcoming.
- Krajewski, Markus. 2003. "Public Services and Trade Liberalization: Mapping the Legal Framework," *Journal of International Economic Law* 6(2): 341-67.
- Kravis, Irving B., Alan Heston, and Robert Summers. 1983. "The Share of Services in Economic Growth," in F. G. Adams and B. Hickman (eds.), *Global Econometrics: Essays in Honor of Lawrence R. Klein*. Cambridge: MIT Press.
- Lang, Andrew. 2004. "The GATS and Regulatory Autonomy" A Case Study of Social Regulation of the Water Industry," *Journal of International Economic Law*, 7(4): 801-38.
- Langhammer, Rolf. 2004. "Revealed Comparative Advantages in Service Trade of the USA, EU, and Japan. What Do They Tell Us?," *Journal of World Investment and Trade* 5(6): 887-96.
- Langhammer, Rolf. 2005. "The EU Offer of Service Trade Liberalization in the Doha Round: Evidence of a Not-Yet-Perfect Customs Union," *Journal of Common Market Studies* 43(2), 311-25.
- Langhammer, Rolf. 2006. "Service Trade Liberalisation as a Handmaiden of Competitiveness in Manufacturing: An Industrialised or Developing Country Issue?," mimeo.
- Lejour, Arjan, Jan-Willem de Palva Verheijden. 2004. "Services Trade within Canada and the European Union," CPB Discussion Paper 42.

- Levine, Ross. 1997. "Financial Development and Economic Growth: Views and Agenda", *Journal of Economic Literature*, 35: 688-726.
- Limão, Nuno and Anthony Venables. 2001. "Infrastructure, Geographical Disadvantage and Transport Costs", *World Bank Economic Review*, 15:315-343.
- Maijoor, Steven, Willem Buijink, Roger Meuwissen, Arjen Van Witteloostuijn. 1998. "Towards the establishment of an internal market for audit services within the European Union," *European Accounting Review* 7(4), 655-73.
- Markusen, James. 1989. "Trade in Producer Services and in Other Specialized Intermediate Inputs," *American Economic Review*, 79, 85-95.
- Markusen, James. 2005. "Modeling the Offshoring of White-Collar Services: From Comparative Advantage to the New Theories of Trade and FDI," CEPR Discussion Paper 5408.
- Markusen, James and Anthony Venables. 1998 "Multinational Firms and the New Trade Theory," *Journal of International Economics* 46:183-203.
- Markusen, James and Anthony Venables. 2000. "The Theory of Endowment, Intra-Industry and Multinational Trade," *Journal of International Economics* 52:209-34.
- Markusen, James, Thomas Rutherford and David Tarr. 2005. "Trade and Direct Investment in Producer Services and the Domestic Market for Expertise," *Canadian Journal of Economics* 38(3): 758-77.
- Marrewijk, C. van, J. Stibora, A. de Vaal, and J.-M. Viaene. 1997, "Producer services, comparative advantage and international trade patterns," *Journal of International Economics* 42: 195-220.
- Marrewijk, C., J. Stibora and A. de Vaal. 1996. "Services Tradability, Trade Liberalization and FDI," *Economica* 63: 611-31.
- Mattoo, Aaditya. 1997. "National Treatment in the GATS: Corner Stone or Pandora's Box?," *Journal of World Trade*, 31(1): 107-30.
- Mattoo, Aaditya. 2000. "Financial Services and the WTO: Liberalization Commitments of the Developing and Transition Economies," *World Economy* 351-86.
- Mattoo, Aaditya. 2004. "The Services Dimension of China Accession to the WTO," *Journal of International Economic Law*, 6: 299-339.
- Mattoo, Aaditya. 2005. "Services in a Development Round: Three Goals and Three Proposals," *Journal of World Trade*, 39 (December), 1223-38.
- Mattoo, A., and P. Sauvé, (eds.) 2004, *Domestic Regulation and Service Trade Liberalization*, Washington, D.C.: The World Bank and Oxford University Press.
- Mattoo, Aaditya and Antonia Carzaniga, (Eds.). 2003. *Moving People to Deliver Services*, Oxford University Press and World Bank, Washington, D.C.
- Mattoo, Aaditya and Randeep Rathindran. 2006. "Does Health Insurance Impede Trade in Health Care Services?," *Health Affairs* 25(2), 358-68
- Mattoo, Aaditya and Sasha Wunsch. 2004. "Pre-empting Protectionism in Services: The WTO and Outsourcing," *Journal of International Economic Law* 7: 765-800.
- Mattoo, Aaditya, Randeep Rathindran and Arvind Subramanian. 2006. "Measuring Services Trade Liberalization and its Impact on Economic Growth: An Illustration," *Journal of Economic Integration*, 21:64-98.
- Mavroidis, Petros and Damien Neven, 2006. "El mess in TELMEX: A comment on Mexico – measures affecting telecommunications services" *World Trade Review* 5, (July)
- McGuire, G. and M. Schuele, 2000, 'Restrictiveness of international trade in banking services,' in Chris Findlay and Tony Warren (eds.), *Impediments to Trade in Services: Measurement and Policy Implications*, London and New York: Routledge.
- Melvin, James. 1989. "Trade in Producer Services: A Heckscher-Ohlin Approach," *Journal of Political Economy*, 97, 1180-96.
- Messerlin, Patrick and Karl Sauvant (eds.), 1990 *The Uruguay Round: Services in the World Economy*. Washington D.C.: The World Bank and UNCTC.

- Millan Smitmans, Hector. 2000. "Dispute Settlement in the Services Area Under GATS," in S. Stephenson (ed.), *Services Trade in the Western Hemisphere*. Washington DC: Brookings and Organization of American States, 105-36.
- Mody, Ashoka. 2004. "Is FDI Integrating the World Economy?," *World Economy* 1195-1222.
- Murinde, Victor and Cillian Ryan. 2003. "The Implications of WTO and GATS for the Banking Sector in Africa," *The World Economy* 181-207.
- Murray, Janet and Masaaki Kotabe. 1999. "Sourcing Strategies of US Service Companies: A Modified Transactions Cost Analysis," *Strategic Management Journal* 20(9), 791-809.
- Nguyen-Hong, D. 2000. "Restrictions on Trade in Professional Services," Productivity Commission Staff Research Paper (Canberra: Ausinfo).
- Nicoletti, Giuseppe. 2001. "Regulation in Services: OECD Patterns and Economic Implications," OECD Economics Department Working paper 287.
- Nicoletti, Giuseppe and Stefano Scarpetta. 2003. "Regulation, Productivity and Growth," *Economic Policy* 36: 9-72.
- Obstfeld, M. and K. Rogoff. 2000. "The Six Major Puzzles in International Macroeconomics: Is There a Common Cause?," NBER working paper 7777.
- Panagariya, Arvind. 2000. "Preferential Trade Liberalization: The Traditional Theory and New Developments," *Journal of Economic Literature* 38 (June), 287-331.
- Park, Se-Hark. 1989. "Linkages Between Industry and Services and Their Implications for Urban Employment Generation in Developing Countries," *Journal of Development Economics*, 30, 359-79.
- Park, Se-Hark, and Kenneth Chan. 1989. "A Cross-country Input-Output Analysis of Intersectoral Relationships between Manufacturing and Services," *World Development*, 17, 199-212.
- Park, Soon-Chan. 2002. "How Far has Regional Integration Deepened? Evidence from Trade in Services," KIEP Working Paper 02-17.
- Parker, D. and C. Kirkpatrick. 2005. "Privatization in Developing Countries: A Review of the Evidence and Policy Lessons," *Journal of Development Studies* 41(4), 513-41.
- Pauwelyn, Joost 2005, 'Rien ne va plus? Distinguishing Domestic Regulation from Market Access in GATT and GATS', *World Trade Review* 4 (2), 131-70.
- Pritchett, Lance. 2006. *Let Their People Come: Breaking the Gridlock on Global Labor Mobility*. Washington DC: Center for Global Development.
- Raff, Horst and Marc von der Ruhr. 2001. "FDI in Producer Services: Theory and Empirical Evidence," CESifo Working Paper 598.
- Rodrik, Dani, Arvind Subramanian and Francesco Trebbi. 2004. "Institutions Rule: The Primacy of Institutions over Geography and Integration in Economic Development." *Journal of Economic Growth* 9: 131-165.
- Reimer, Jeffrey. 2006. "Global Production Sharing and Trade in the Services of Factors," *Journal of International Economics* 68:384-408.
- Riddle, Dorothy. 1986. *Service Led Growth: The Role of the Service Sector in World Development*. New York: Praeger.
- Rivera-Batiz, F. and L. Rivera-Batiz. 1992. "Europe 1992 and the Liberalization of Direct Investment flows: Services vs. Manufacturing," *International Economic Journal* 6: 45-58.
- Robert-Nicoud, Frederic. 2006. "Off-Shoring of Business Services and Deindustrialization: Threat or Opportunity – And For Whom?," CEPR Discussion Paper 5617.
- Romer, Paul 1994, 'New Goods, Old Theory and the Welfare Cost of Trade Restrictions', *Journal of Development Economics* 43, 5-38.
- Rousslang, Donald and Theodore To. 1993. "Domestic Trade and Transportation Costs as Barriers to Trade," *Canadian Journal of Economics* 26: 208-21.
- Roy, Martin, Juan Marchetti and Hoe Lim. 2006. "Services Liberalization in the New Generation of Preferential Trade Agreements: How Much Further than the GATS?," Staff Working paper ERSD-2006-07, WTO.

- Rugman, Alan. 1987. "Multinationals and Trade in Services: A Transaction Cost Approach," *Weltwirtschaftliches Archiv* (Review of World Economics), 123, 651-67.
- Rutherford, Thomas, David Tarr and Oleksandr Shepotylo, 2006. "The Impact of WTO Accession and the DDA: The Importance of Liberalization of Barriers Against FDI in Services for Growth and Poverty Reduction," in Thomas Hertel and L. Alan Winters (eds.), *Poverty and the WTO* (Palgrave and World Bank), 467-96.
- Ryan, Cillian. 1990. "Trade Liberalisation and Financial Services," *The World Economy* 13: 349-66.
- Ryan, C. 1992. "The Integration of Financial Services and Economic Welfare," in L. Alan Winters (ed.), *Trade Flows and Trade Policy After 1992*. Cambridge: Cambridge University Press, 92-118.
- Saint-Paul, Gilles. 2005. "Making Sense of Bolkenstein-Bashing: Trade Liberalization under Segmented Labor Markets," IZA Discussion Paper 1618.
- Sampson, Gary and Richard Snape. 1985. "Identifying the Issues in Trade in Services," *The World Economy*, 8, 171-81.
- Sapir, André. 1993. "The structure of services in Europe: A conceptual framework," in P. Buigues, F. Ilzkovitz, J-F. Lebrun and A. Sapir (eds.), *Market Services and European Integration: The Challenges of the 1990s* (Brussels: Commission of the European Communities, *European Economy, Social Europe*, Reports and Studies No. 3, pp. 85-97.
- Sapir, Andre. 1999. "GATS 1994-2000," *Journal of World Trade*, 33(1), 51-66.
- Sapir, André and Ernst Lutz. 1980. "Trade in Non-Factor Services: Past Trends and Current Issues," World Bank Staff Working Paper No. 410. Washington D.C.
- Sapir, André and Ernst Lutz. 1981. "Trade in Services: Economic Determinants and Development-Related Issues," World Bank Staff Working Paper No. 480. Washington D.C.
- Sapir, André and Chantal Winter. 1994. "Services Trade," in David Greenaway and L. Alan Winters (eds.), *Surveys in International Trade*. Oxford: Basil Blackwell.
- Sauvant, Karl and Zbigniew Zimny. 1987. "Foreign Direct Investment in Services: The Neglected Dimension in International Service Negotiations," *World Competition*, 31, (October), 27-55.
- Sauvé, P., 2002, "Completing the GATS Framework: Safeguards, Subsidies and Government Procurement", in Hoekman, B., Mattoo A. and P. English (eds.), *Development, Trade and the WTO: a Handbook*, Washington DC: The World Bank, 326-35.
- Stephenson, S.M. (2002), "Regional versus Multilateral Liberalisation of Services," *World Trade Review*, 1(2), 187-209.
- Stern, Robert M. (ed.). 2000. *Services in the International Economy*. Ann Arbor: University of Michigan Press.
- Stern, Robert and Bernard Hoekman. 1988. "The Service Sector in Economic Structure and in International Transactions," in Leslie V. Castle and Christopher Findlay (eds.), *Pacific Trade in Services*. Sydney: Allen & Unwin.
- Stern, Robert M., and Bernard Hoekman. 1987. "Analytical Issues and Data Needs for GATT Negotiations on Services," *The World Economy*, 10, 39-60.
- Stibora, Joachim and Albert de Vaal. 1995. *Services and Services Trade: A Theoretical Inquiry*. Rotterdam: Netherlands Economic Institute.
- Triplett, Jack and Barry Bosworth. 2000. "Productivity in the Services Sector," in R.M. Stern (ed.), *Services in the International Economy*. Ann Arbor: University of Michigan Press, 23-53.
- Triplett, Jack E. and Barry P. Bosworth. 2004. *Productivity in the US Services Sector: New Sources of Economic Growth*. Washington, D.C.: Brookings Institution Press
- Trollet, Claude and John Hegarty. 2003. "Regulatory Reform and Trade Liberalization in Accountancy Services," in A. Mattoo and P. Sauvé, (eds.) *Domestic Regulation and Service Trade Liberalization*, Washington, D.C.: The World Bank and Oxford University Press, 147-66.
- UNCTAD. 2004. *World Investment Report 2004: The Shift Towards Services*. Geneva: United Nations.
- UNCTAD and World Bank. 1994. *Liberalizing International Transactions in Services: A Handbook*. New York: United Nations.
- Uno, K. 1989. *Measurement of Services in an Input-Output Framework*. Amsterdam: North Holland.

- Vaal, Albert de and M. Van den Berg. 1999. "Producer Services, Economic Geography and Services Tradability," *Journal of Regional Science*, 39 (3), 539-572.
- Van Welsum, Desiree. 2004. "In Search of Offshoring: Evidence from US Imports of Services," Birkbeck Working paper in Economics and Finance 0402.
- Walmsley, Terrie and L. Alan Winters, 2005, "Relaxing the Restrictions on the Temporary Movement of Natural Persons: A Simulation Analysis," *Journal of Economic Integration* 20(4), 688-736
- Warren, Tony and Christopher Findlay. 2000. "Measuring impediments to trade in services," in Pierre Sauvé and Robert Stern (editors), *GATS 2000: new directions in services trade liberalization*, Brookings Institution Press, Washington, DC, pp. 57-84.
- Whalley, John. 2004. "Assessing the Benefits to Developing Countries of Liberalization in Services Trade," *The World Economy* 27(8), 1223-53.
- Whichard, Obie. 2000. "Measurement and Classification of Service Sector Activity: Data Needs for GATS 2000," in R.M. Stern (ed.), *Services in the International Economy*. Ann Arbor: University of Michigan Press, 83-117.
- Wilson, John.S., Catherine Mann and Tsunehiro Otsuki. 2004. "Assessing the Benefits of Trade Facilitation : A Global Perspective," *World Economy* 28(6): 841-71.
- Wünsch -Vincent, Sacha. 2006. *The WTO, the Internet and Trade in Digital Products*. Oxford: Hart Publishing.
- Zdouc, Werner. 1999. "WTO Dispute Settlement Practice relating to the GATS," *Journal of International Economic Law*, 2:295-346.