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Services Trade and Policy

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Joseph Francois and Bernard Hoekman

Services Trade and Policy

Contents

Abstract ..... *i*

1 Introduction 1

2 The Role of Services 2

3. Trade in Services: Theory 5
   3.1 The proximity burden 5
   3.2 Modes of supply and the firm 7
   3.3 Market structure, tasks, and fragmentation 9
   3.4 Regulation 10

4. Empirics 11
   4.1. The evidence on modes of supply and firm behaviour 12
   4.2. Measuring openness in services 16
      4.2.1. Openness indexes and trade cost rankings 17
      4.2.2. Gravity estimates 20
   4.3. Quantifying the impact of policy 21
      4.3.1. Retrospective studies 23
      4.3.2. Prospective studies 26

5. The Political Economy of Liberalization 29
   5.1. Liberalization commitments in the GATS 29
   5.2. Trade agreements as domestic policy reform anchors 31
   5.3. Bargaining incentives 34

6. Summary and Ruminations: Directions for Research 37

7. References 41

List of Tables and Figures

Table 2.1 Services, % share of value added 50

Table 3.1 GATS-speak 50

Table 4.1 A Typology of Policies Affecting Foreign Services Transactions 50

Table 4.2 Estimates of price/cost impacts of services policies 51

Table 4.3 Openness index for operations of MNEs 52

Table 4.4 Services trade restrictiveness index (STRI), 2009 53

Table 4.5 Services Imports – Heckman 2-stage selection model with NTB elasticities. Bilateral services imports 2004-2006 54

Table 5.1 Structure of a GATS schedule of specific commitments for a given service activity 55

Table 5.2 GATS Commitments by EU-15 Member States, by Mode of Supply 55

Figure 2.1 World Trade in Commercial Services in 2006, shares (Balance of Payments basis, from IMF and OECD data, excluding transport and travel) . 56

Figure 4.1 Restrictiveness of Services Trade Policies by GDP per capita, 2007 57

Abstract

Since the mid-1980s a substantial body of research has taken shape on trade in services. Much of this is inspired by the WTO and regional trade agreements. However, an increasing number of papers focus on the impacts of unilateral services sector liberalization. The literature touches on important linkages between trade and FDI in services and the general pattern of productivity growth and economic development. This paper surveys the literature on services trade, focusing on contributions that investigate the determinants of international trade and investment in services, the potential gains from greater trade, and efforts to cooperate to achieve such liberalization through trade agreements. There is increasing evidence that services liberalization is a major potential source of gains in economic performance, including productivity in manufacturing and the coordination of activities both between and within firms. The performance of service sectors, and thus services policies, may also be an important determinant of trade volumes, the distributional effects of trade, and overall patterns of economic growth and development. At the same time, services trade is also a source of increasing political unease about the impacts of globalization on labour markets, linked to worries about offshoring and the potential pressure this places on wages in high income countries.

***Keywords**: trade in services, outsourcing, modes of supply, trade and FDI, foreign affiliate trade, WTO, GATS, trade agreements, economic development*

***JEL classification:** F1, F2, F5, L80*

Services Trade and Policy

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1. Introduction

The importance of services as a share of overall production and employment increases with growth and development. This expansion in the services-intensity of economies is driven by a number of forces, including final demand factors and basic structural changes in production linked to development. Accelerating this process, recent advances in information and communication technologies are increasingly permitting cross-border, "disembodied" trade in services. The competitiveness of manufacturing 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. In particular, the feasibility of processes linked to outsourcing (also called fragmentation, production sharing and off-shoring) depends on access to and the cost of such services. Additionally, international exchange is increasingly taking the form of trade in tasks as opposed to trade in products, as the production process is sliced into different parts that are performed in different locations (Grossman and Rossi-Hansberg, 2008).

According to the WTO, the global value of cross-border services exports in 2007 was $3.3 trillion, or some 20 percent of world trade in goods and services. However, the share of services rises to almost 50 percent if transactions are measured in terms of direct and indirect value added content – that is, if trade is measured in terms of the value that is added by processing of imported components into final products for export as opposed to measuring trade flows on the basis of the gross value of goods crossing the border (Escaith, 2008). If we add in the sales of services by foreign affiliates of multinational firms, then the value of trade in services rises further. Data for 15 OECD countries puts the value of such sales at some $1.5 trillion in 2007 (WTO, 2008).

While the expanding economic importance of services has not gone unnoticed, services have not figured prominently in the economic growth and development literature, and have only recently been highlighted in the trade literature. Traditional international economics textbooks tend to assume (assert) that services are largely non-tradable.[1] This started to change with the emergence of services on the international policy agenda in the 1980s, in part as a consequence of U.S. proposals to negotiate multilateral rules on policies affecting trade and investment in services. The initial response of most countries to the U.S. initiative, put forward formally at the 1982 GATT Ministerial meeting, was to call for further study. 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, reflected, for example, in many of the poorest developing countries having a "revealed

[1] 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. Griffiths (1975) is an early study documenting barriers to trade in services.

comparative advantage" in services when measured on a balance-of-payments basis.[2] This realization helped overcome some of the early resistance by 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] Building on the early literature in this area, there is now a substantial body of research on the topic, as well as a long list of research issues yet to tackle.[4]

In this paper we survey the literature and discuss the research agenda relating to the joint phenomena of service sector growth and increased internationalization of services. Section 2 briefly discusses the increasing importance of services in the economic landscape. Evidence from the literature on both OECD and developing countries strongly suggests that producer services, in particular, play a critical role in productivity growth in general, including manufacturing competitiveness. The contribution of services in this regard is closely related to patterns of market segmentation, openness, and trade. In Section 3 we focus on the theoretical literature on services trade. This includes issues of complementarity between cross-border services trade and FDI, the role of market structure, and the organization of international service firms. Section 4 provides an overview of the empirical literature, a research area with great potential to directly impact policy formation. In some areas, there is complementarity between the issues highlighted in the theoretical literature, and those that emerge from careful study of the data. However, there is still great deal of room for research that better arbitrages between the issues highlighted in the theoretical and empirical literatures. Section 5 is devoted to the recent literature on the political economy of trade and policy in services, including efforts to quantify negotiated commitments in trade agreements. Section 6 concludes with suggestions for further research.

2. The Role of Services

Modern economies are increasingly dominated by services. Over the last three decades, services have grown from roughly 58 percent of GDP to almost 75 percent across the OECD (Table 2.1). The sector is also important by other measures, including employment shares, cost shares for industry, and sector share

[2] Sapir and Lutz (1980, 1981), Bhagwati (1987), Hindley (1988), Stern and Hoekman (1987) and Francois (1987). The revealed comparative advantage 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 a country is said to have a revealed comparative advantage in the product.

[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 and Doha Round talks and/or the GATS or is inspired by it. Books 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 service trade literature as of the early 1990s. Recent compilations of analyses of services trade include a special issue of the *Journal of Industry, Competition and Trade* (Lejour and Smith 2008), Stern, Mattoo and Zannini (2008), Marchetti and Roy (2008) and Reinsdorf and Slaughter (2009).

of overall FDI.[5] In the case of the industrialized countries, this is a trend that actually began much earlier, linked to fundamental changes in the structure of the economy that were already underway in the late 19th and early 20th century (Francois 1990a; Broadberry and Ghosal 2005). It is also a trend reflected in changes across the global economy. From Table 2.1, services have grown from 55 percent of global GDP to roughly 70 percent between 1977 and 2007. This reflects not only changes in the OECD. In Latin America, for example, services accounted for 66 percent of value added in 2007, up from 49 percent in 1977. Similar trends can be seen in other regions. Even in sub-Saharan Africa, where per-capita income growth has lagged behind other developing regions, there has been a marked shift in value added toward the service sectors.

Though the general rise in the importance of services in modern economies is driven by both final and intermediate demand factors, changes in the trade and production patterns of producer services are particularly striking.[6] Services are very heterogeneous, and span a wide range of economic activities. Conceptually, this diversity masks a fundamental function that many services perform in relation to overall economic growth and economic development: they are inputs into production. One dimension of this 'input function' is that services facilitate transactions through space (transport, telecommunications) or time (financial services) (Melvin, 1989). Another dimension is that services are frequently direct inputs into economic activities, and thus determinants of the productivity of the 'fundamental' factors of production – labor and capital – that generate knowledge, goods and other services. Education, R&D and health services are examples of inputs into the production of human capital. With growth in national and international outsourcing by firms – especially manufacturing firms – the demand for services as

[5] For a discussion of 'stylized facts' regarding the changing role and structure of services as countries become richer, see Inman (1985), Stern and Hoekman (1988), Francois and Reinert (1997), Schettkat and Yocarini (2006), and Francois and Woerz (2008). Francois and Reinert note that: (i) the share of value added originating in services is positively linked to the level of per capita income; (ii) income levels are positively associated with employment shares for intermediate services and with the share of services activities *within* total manufacturing employment; (iii) income levels are strongly linked to demand by firms for intermediate or producer services, particularly in manufacturing; and (iv) changes in the allocation of service activities between manufacturing and service firms (outsourcing) explains only a small share of service sector growth – fundamental changes in the structure/organization of production dominate.

[6] Both final and intermediate demand factors are important in explaining the growing share of services in the economy. Early explanations for the rise of services initially focused on final demand factors (Clark 1940, Baumol 1967). Demand-side explanations relate the pattern of rising final or consumer service prices and expenditure shares to relative productivity differentials. The result is a prediction of stagnating overall productivity growth – the 'Baumol disease' – and the related theoretical literature explaining the Balassa-Samuelson effect. This includes Bhagwati (1984b), Hunter and Markusen (1988) and Panagariya (1988). Also see Kravis, Heston and Summers (1983), Inman (1985), Park and Chan (1989) and Uno (1989). Production-side explanations are more recent, and stress analytical and empirical linkages between intermediate or producer services and the manufacturing sector, assigning both a direct and indirect role for services in the economy and making contrary predictions to those linked to the Baumol disease. For example, Hoekman and Mattoo (2008) stress the conjecture by Francois (1987, 1990a) that rising demand for producer services as inputs into manufacturing implies overall productivity growth commensurate with a rising overall services share in employment and value added. This is linked to what Katouzian (1970) called increased roundaboutness of production in general and in manufacturing in particular, i.e., greater specialization and division of labor. See footnote 7 for further discussion.

intermediate inputs in production has grown commensurately. Parallel with a growing importance of intermediate services and outsourcing, on the international side the combination of disintegration of production processes into tradable tasks – also called 'splintering' of production by Bhagwati (1984a) – and technological progress in information and communication technologies has allowed a rising share of intermediate services in total trade. This dominance is clear from recent shares in total services trade (Figure 2.1).

While there are serious measurement challenges that afflict productivity measurement for many service industries (because it is often difficult to define the real output of a service sector), empirical analyses have documented significant productivity growth in a number of service sectors. For example, Triplett and Bosworth (2004) have calculated both labor and multifactor productivity for a range of service industries, concluding that productivity growth in distribution and financial services fueled much of the post-1995 overall expansion in U.S. productivity. Information technology and managerial innovations – such as outsourcing and specialization – and new concepts of retailing such as the "big box" store format helped to transform and accelerate productivity in these sectors.[7]

Moving past U.S.-based evidence, productivity performance of service industries differs significantly across OECD countries. For a sample of seven OECD countries, Inklaar, Timmer and van Ark (2007, 2008) show that differences in aggregate productivity levels and growth rates are largely attributable to service sectors. That is, productivity levels/growth rates in manufacturing are relatively similar across countries compared to intermediate services. Higher services productivity growth in the post-1995 period for countries such as the U.S., Canada and the U.K. is only partially explained by information and communications technology investment/use. More important is total factor productivity (TFP) growth. This TFP growth is not observed for the Euro-land countries in their sample. Decomposition by industry suggests that much of the differential is due to variation in business services

[7] An obvious but relatively unexplored avenue for research is joint analysis of competing final and intermediate demand mechanisms (Baumol 1967 and Francois 1990a) – stagnation linked to consumer services, and productivity growth linked to producer services – in a unified framework. Systematic variation across countries ranked by incomes in cross-section macro data, from consumer to producer services, supports such an approach. Once it is recognized that services are often inputs, an expansion of the service sector can increase growth. Oulton (2001) has shown that an expansion in stagnant services inputs may increase overall growth, because greater outsourcing of services by (productive) firms in non-stagnant sectors entails a reallocation of factors that increase overall output and aggregate productivity. In a related analysis, Fixler and Siegel (1999) argue that outsourcing of services by manufacturing firms may show up in short term divergences in measured productivity growth of services vs. manufacturing sectors. Kox (2004) provides some empirical support for Oulton's argument, showing that business services in the Netherlands both expanded rapidly in the 1990s and displayed stagnating productivity growth. However, from an economy-wide perspective, the business services sector is a mechanism for the transmission of knowledge spillovers, with the expansion in the supply of such services being associated with a change in the production process of client firms, as opposed to simple labor substitution. That said, in the long run, if the growth rate of productivity is lower in final demand services than in manufacturing, the Baumol result still holds. See Sasaki (2007) for an analysis of the question using a model of aggregate productivity growth that considers the role of services both as intermediate inputs and as final consumer products. Most of this literature does not consider the role of services in the "production function" for R&D and human capital formation. Pugno (2006) is an exception.

performance across countries. An obvious question raised by this finding is what explains the divergence in performance (i.e., what determines services productivity), and to what extent policy variables such as regulation, limits on entry into or scaling up of business services, investment restrictions, etc. affect services performance. More specifically, a question Inklaar, Timmer and van Ark do not focus on is how trade and thus trade policy affects services performance. For example, insofar as all of the OECD countries in their sample are similar in regard to openness to foreign competition, domestic regulatory policies that segment markets may be the major determinant of diverging productivity performance (Nicoletti 2001; Nicoletti and Scarpetta 2003). But if there are sectors where there is very little international competition, trade policy may also play a significant role. Reinforcing this result, Francois and Woerz (2008) find that increased import penetration by producer services has a positive effect on the skill and technology mix of exports in a panel of OECD countries, with greater openness in producer service sectors implying better export performance by skill and technology intensive industries. They also observe a negative impact of more producer service imports on value added and exports in labor intensive manufacturing industries. Recent evidence at the firm level reinforces the basic message of linkages between services offshoring, firm productivity, and the skill intensity of production. This includes Arnold, Mattoo and Narciso (2008) who examine African firms, and Jensen (2008) who examines U.S. firms. The question of linkages between intermediate services, regulation, and general patterns of productivity is a promising line of future research as more data become available.[8]

3. Trade in Services: Theory

What is different about trade in services compared with trade in goods? There are many points that could be emphasized. In this section, we provide a broad overview of the theory on the mechanics of international services trade and some of the implications this carries for public policy and the gains from trade. The emphasis on alternative modes through which international exchange may occur, market structure, and regulation also guides much of the empirical and political economy literature reviewed in the sections that follow.

3.1 The proximity burden

Because, by definition, services are a flow and so are 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 (Hill 1977). Given the need for proximity in exchange, factors like distance place a

[8] The OECD is actively producing survey-based measures of regulatory regimes, and the World Bank is supplementing these with surveys of the investment climate and services trade policies in developing countries. At the same time, we have expanding access to relatively comparable datasets mapping intermediate linkages and input-output structures across countries, like the EU-KLEMS dataset funded by the European Commission, and the GTAP database funded by a consortium of international and national organizations.

cost burden on certain forms of services delivery. This is the proximity burden (Christen and Francois 2009). Beginning in the early 1980s, technological change has progressively weakened the proximity burden. In an early paper on this phenomenon, Bhagwati (1984a) explored its implications, emphasizing mechanisms through which services are "disembodied" or "splintered" from goods or people as "carriers." He argued that trade in services may expand as a result of the incentive to "splinter" the production chain geographically, not just in terms of tangible inputs but also services. The more recent literature calls this process fragmentation. Fragmentation in turn may lead to basic changes in the structure and pattern of trade, as low-wage activities can be sliced away and outsourced. Of course, the fragmentation of production is not an issue unique to services trade (Francois 1990c, Jones and Kierzkowski 1990, Baldwin and Robert-Nicoud 2007). However, the significance of underlying proximity constraints for service transactions to be feasible means that "trade" may require a heavier dose of local presence of suppliers in the mix of cross-border and locally-supplied services than is the case with goods. Indeed, while the standard definition of outsourcing is broad – including all inputs acquired from unaffiliated companies (Helpman 2006) – the recent outsourcing literature focuses more narrowly on arms-length intermediate service transactions with foreign firms (Amiti and Wei, 2005; Bhagwati, Panagariya, and Srinivasan 2004).

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. This is recognized in the policy community, where the cross-border and local presence (or commercial establishment) components of international service transactions are referred to as modes of supply. Indeed, an important paper by Sampson and Snape (1985) developed the typology for modes 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, is cross-border supply. It 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. 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. In reality, there are services where the proximity burden remains so strong that delivery must be local, so that foreign ownership (establishment) is required (mode 3). We summarize the four modes in the Table 3.1.

Jointness in production has a number of implications for the normative and positive aspects of trade and foreign investment in services. For example, jointness means there may be basic inconsistencies between potential trade flow rankings in services and relative domestic price rankings, complicating the

analysis of potential trade volumes, as well as the estimation of trade barriers based on price comparisons, i.e., apparently higher priced markets may actually have comparative export advantage. In addition, asymmetric information and the resulting need for regulation also implies that regulatory regimes affecting the (temporary) movement of people and the longer-term establishment of service suppliers (e.g., visa restrictions and economic needs tests; FDI policies) are important determinants of the feasibility of trade in services. Finally, proximity requirements also lead to potential complementarity in modes of protection on trade and FDI. Cross-border trade restrictions may limit FDI incentives, while restrictions on the operations of foreign firms may limit cross-border trade in goods. We focus on this issue in the following sub-section on modes of supply and the theory of the firm. It should be borne in mind that in many cases the proximity burden is complete, in that sales can only be accomplished locally, with little or no scope for cross-border trade – movement of suppliers or consumers is required.

3.2 Modes of supply and the firm

The international mechanisms (the GATS and regional integration agreements) that discipline government policies affecting the foreign activities of service firms emphasize alternative channels for market access, and negotiations are structured around improved conditions for access through these channels. An important question therefore relates to how the combination of cross-border trade and establishment trade is realized. Does it take place within firms (a mix of intra-firm and establishment trade) or occur through arms-length (unaffiliated) trade? Understanding this involves internalization incentives, the benefits of licensing service technologies, and the decision (and feasibility) of service firms to sell cross-border, invest locally, or engage in a mix of the two.

In a sense, the questions outlined in the paragraph above are very similar to those addressed in the literature on horizontal vs. vertical FDI for goods-producing firms. In particular, the integrating approach called the "knowledge-capital model" of FDI, and recent theoretical work on the boundary of the firm and firm efficiency (Antràs 2003, Blonigen, Davies and Head 2003; Ethier and Markusen 1996; Markusen and Maskus 2003; Markusen 2002; Helpman, Melitz and Yeaple 2004; and Helpman 2006) focus on similar questions. There are, however, potentially important differences (Markusen and Strand 2009). The literature on foreign production by multinational enterprises (MNEs) in goods emphasizes trade-offs between coordination costs and trade costs (both physical transport costs and policy-driven costs) on the one hand, and potentially higher costs of foreign production linked to management of multi-plant operations. For services, we do not have physical transport costs that hinge on distance, while conceptually FDI may involve local establishments that do not serve primarily as production nodes or plants, but rather as transit points for sale of home production to foreign markets. Furthermore, distance costs may be linked to problems of coordination when dealing with customers, rather than with problems linked to physical loading and shipping of goods. Indeed, recent evidence suggests that, at the aggregate

level of industries and total flows, the collective response of individual service firms to distance leads to a striking difference in the impact of distance on the mix of establishment based sales and direct export sales when we compare goods and services. (Christen and Francois 2009, Lennon 2008).

Another pattern in the data to be explained theoretically is variation in the mix between unaffiliated (external) trade in services, affiliated (internal) trade, and delivery through foreign establishments. While there is an exploratory literature on the empirical aspects of this relationship, the theoretical foundations remain weak. In our view, the new theory on firm selection and efficiency provides some insight here, and promises a useful framework for analysis of firm-level choice of modes in the service sector.[9] Behrens and Ottaviano (2009) provide a useful synthesis for our purposes, working with a stylized representation of recent firm models to explore a range of issues affecting goods-producing firms. Given a mix of trade and coordination costs, there is a natural sorting into local, exporting, and MNEs driven by variations in firm productivity. Turning to the decision to internalize transactions, they examine good-producing firms that face the same physical trade costs for exports, while shipments outside the firm face an additional cost relative to internal shipments. At the same time, they assume internal shipments save on contract costs but impose additional firm governance or management costs. In such a setup, when combined with heterogeneity in overall cost structures, the relationship between productivity and the decision to trade internally or at arms length depends on the trade-off between these various costs. With an appropriate range of parameters, firms with low overall productivity serve only the local market, firms with more intermediate costs serve foreign markets through arm's-length or unaffiliated trade, while the most efficient firms serve distant markets through intra-firm exports.

While the recent body of theory on firms and trade focuses on goods producing firms, the same basic theoretical framework also promises valuable insights for service firms, once we reinterpret physical transport costs as distance costs following from the proximity burden. The first insight relates to "natural" elements of firm costs (those outside policy). Where the most efficient firms engage in internal trade and FDI, since in heterogeneous firm models market share primarily goes to the more efficient firms, we should see most cross-border services trade taking place within MNEs rather than through unaffiliated sales. Going further, establishment sales should be more important than unaffiliated sales for the same reasons. Another insight relates to the impact of policy. In the theoretical literature, internalization hinges on a mix of costs affecting internal and arms-length delivery, as well as multi-plant versus single plant costs and distance costs. If we map these to the different modes of supply, concessions made in trade agreements or unilateral changes in national policies that affect these different costs should affect the choice of modes, the importance of establishment sales, and the importance of arms-length versus internal

[9] See Helpman (2006) for a comprehensive overview.

cross-border sales, in predictable ways. This suggests potentially fruitful application of the recent theory on goods-producing MNEs and internalization of transactions to formulate questions that map nicely to patterns in the services trade and policy data.

3.3 Market structure, tasks, and fragmentation

Scale economies, imperfect competition, and product differentiation all carry implications for growth and the gains from trade. Markusen (1989, 1990) has emphasized the role of increased specialization in producer services as a source of gains from trade in services. This implies gains from increased varieties of services and expanded markets. It has been an important mechanism for estimated gains from trade in the empirical literature reviewed in the next section. Even lacking externalities in the service sector, trade may still support productivity growth in manufacturing. For example, Oulton (2001) has shown that this may increase overall growth, because greater outsourcing of services by (productive) firms in non-stagnant sectors entails a reallocation of factors that increase overall output and aggregate productivity. Along similar lines, Fixler and Siegel (1999) argue that outsourcing of services by manufacturing firms may show up in short terms divergences in measured productivity growth of services vs. manufacturing sectors.

The literature also highlights productivity linkages between the organization of production (tasks) within firms and the role of services in making possible the process of offshoring (Debaere, Görg, and Raff 2009). Francois (1987, 1990a) offers a formal model of nested tasks based on the Edwards and Star (1987) characterization of division of labor in production. Services serve a coordination role, and make possible a further subdivision of tasks and wholesale reorganization of production, leading to economies of scale. Jones and Kierzkowski (1990) offer a less formal analysis of the same issue. Given the emphasis of this literature on the role of producer services in the organization of production, the support of division of labor in manufacturing provides an additional vector for growth effects. Other papers along these lines include Guerrieri et al. (2005) with a theoretical analysis that includes the role of greater competition in producer services as a driver of economic growth, and Burgess and Venables (2004) who identify the importance of a variety of services "inputs" that support specialization, creation and diffusion of knowledge, and exchange.

Historically, service industries have also been characterized by a mix of network externalities (telecommunications, finance, transportation), heavy regulation (communications, insurance, professional services), and both natural and policy barriers to entry. This is also true, of course, in many goods sectors. However, in the case of services, the sectors involved are often "margin sectors," meaning they facilitate transactions between agents though transport, communications, trade, and intermediation activities (Deardorff, 2001). This implies potential market power both downstream through oligopoly or monopoly pricing, and upstream through oligopsony or monopsony pricing. Market power then drives a pricing

wedge between goods producing firms and their customers, between savers and investors, and between economic agents relying on communications and transport linkages. For these reasons, the theoretical literature on trade and FDI in services has also emphasized the importance of regulation and competition.

One theme highlighted in contributions to this literature is market power in trade and distribution sectors. This is closely related to the recent macroeconomic literature on price pass-through, which also highlights the structure of retail sectors in determining transmission of border prices to consumers and downstream industry. Raff and Schmidt (2009) examine the potential for trade liberalization in goods to lead to increased concentration in the retail sectors, while Francois and Wooton (2009) focus on the impact of combined oligopsony/oligopoly pricing in retail and wholesale trade on the gains from trade liberalization. Francois and Wooton (2001b) focus on a related issue, developing a theoretical structure where trade requires transport costs supplied by a shipping sector operating as an oligopoly. In general, the message from this literature is that with intermediate service firms exercising market power on two margins (including retail, wholesale, and transport/logistic firms), the gains from trade in goods hinges on the degree of competition in service sectors, and trade and FDI policy in services may therefore impact directly and substantively on trade in goods.

In addition to cross-sector adjustment issues, the theoretical literature also demonstrates that sequencing of policy reforms may be important because of interactions between market structure and alternative modes of supply within sectors. Francois and Wooton (2001a) introduce this point, examining the interaction between different modes of market access liberalization in services. Their results 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. As the cost of disembodied cross-border trade (mode 1) falls (from negotiated concessions, for example), the incentive for domestic oligopolistic sectors to accommodate foreign competitors through welfare-reducing establishment (mode 3) rises. A policy implication is that active domestic competition law enforcement may be beneficial in such instances.

3.4 Regulation

Regulation in services is pervasive and is driven by both efficiency and equity concerns. The characteristics of many services give rise to market failures. For example, the existence of natural monopoly or oligopoly is a feature of "infrastructure services" that require specialized distribution networks: roads and railways, airports, or cables and satellites for telecommunications. Entry into such activities will often be restricted because of geography and policy. Regulation of the owners/operators of the networks can then enhance efficiency by seeking to preclude prohibitive charges for access or interconnection to their established networks. Problems of imperfect and asymmetric information are frequent in the services context. Buyers (consumers) confront serious hurdles in assessing the quality of service providers – e.g., the competence of professionals such as doctors and lawyers, the safety of

transport services, or the soundness of banks and insurance companies. When such information is costly to obtain and disseminate and consumers have similar preferences about the relevant attributes of the service supplier, the regulation of entry and operations in a sector can increase welfare. In addition to efficiency justifications for regulation, governments may regulate to achieve equity objectives – e.g., ensuring access to services for disadvantaged regions, communities or households. Instruments to pursue equity objectives may rely on command and control – e.g., requiring a minimum number of poor households to be served, establishment of certain number of facilities in specific locations – or on the price mechanism. Examples of the latter are universal access funds that are competitively allocated to providers and used to cover the additional costs of service delivery.[10]

The design of efficient regulation is not something on which trade economists have much to say. However, the existence of regulation, and the fact that regulation of the same service differs across countries, can have important implications for the feasibility of trade, the welfare impacts of trade liberalization, and empirical assessments of the size of such impacts.

4. Empirics

Quantifying the effects of policies geared toward foreign services transactions is subject to a three-dimensioned measurement problem. As discussed above, international services transactions are more complex to analyze because of the need to consider different modes of supply (i.e., different "carriers" that transport services), their availability (costs), and the relationship between different modes (complements or substitutes). The prominent role of such complexity in services means that governments have a great many degrees of freedom in restricting foreign transactions, and the nature of these restrictions often may imply even less transparency than is the case for nontariff barriers affecting goods. Limited transparency leads to the first facet of the measurement problem – the availability of information on policies that restrict international trade in services is limited and inherently imprecise. The second aspect of the problem is related to the first – there are conceptual problems haunting even the basic definitions on which such measures are based. Adding to the measurement problems of observation and definition are problems linked to the tracking of actual foreign transactions across modes. This leads to the third facet – we have poor information on foreign transactions in 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. Because services are not directly observed crossing borders, at best factors of production (labor, suppliers) may be observed. In the case of services, governments do

[10] Kenny and Keremane (2007) discuss the example of telecommunications, where countries such as Chile, Peru and Uganda have put in place systems in which private providers compete (bid) for performance-based subsidies that are conditional on providing services to targeted households/regions. This ensures that they reap some of the benefits of competition, while minimizing outlays for the government – the "reverse auction" process allows it to discover the true cost of service provision.

technically need to track flows for maintenance of basic balance of payment statistics. However, it has been only recently that these data have shifted from residual flows to more serious efforts to explicitly track foreign commercial transactions.[11]

Sector studies reveal that it makes little sense to speak collectively of "the service sector." Different services play different roles in the economy, have very different market structures, and rely on (require) different modes of supply in contesting foreign markets. 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 policy reform and trade agreements, as discussed in the next section. Therefore, while we place emphasis in this section on policy broadly affecting different modes of supply, like the literature itself we will also concentrate on sector-specific issues where we deem it particularly relevant or informative.

Keeping the many necessary caveats in mind about measurement, we focus on three broad questions in this section. The first is the evidence on modes of supply. This lends insight into the range of policy tools used to regulate international service transactions. The second is the quantification of the nature and magnitude of current barriers to cross border and establishment-based services trade. The third is the impact of service sector liberalization on key indicators of broader economic performance.

4.1. The evidence on modes of supply and firm behavior

One implication of much of the early theoretical contributions on services trade was that negotiating attention should center on FDI and the (temporary) movement of service suppliers, that is, international factor movement. Over time, however, it became increasingly apparent that the disembodied cross-border trade in services that was the focus of Bhagwati's (1984a) 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. As patterns of technology underpinning services trade evolve, 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 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.

Given likely linkages across modes and the potentially critical role for foreign establishment (FDI) in overall services trade, a key issue is the need to complement existing measurement of

[11] See for example, Karsenty (2000), Whichard (2000) and Reinsdorf and Slaughter (2009).

international transactions on the basis of geographic location (the residency criterion) with measures that center on the ownership of firms (Baldwin and Kimura 1998). To address this, 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 but the extent of available data remains frustratingly limited. The best FATS data are collected by the U.S. They suggest that mode 3 is the most important channel for U.S. firms to sell services to foreigners. In 2005, sales of services by U.S. foreign affiliates ($530 billion) were some 50 percent higher than total cross border services exports as registered in the balance of payments ($360 billion). The global stock of FDI stood at some $15 trillion in 2007, of which about 60 percent was in services. The total value of FATS for 15 OECD countries in 2007 has been estimated at some $3 trillion (Hoekman and Kostecki 2009).

The more rapid rise in FATS than cross border trade in services since the mid-1990s may be 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.[12] Increased use of services outsourcing may result in cross-border trade in services coming to dominate FATS at some point in the future, but this is far from being the case today.[13] A noteworthy stylized fact of the 2008 collapse of world trade was that cross-border trade in services proved to be more robust than trade in goods (Borchert and Mattoo, 2009). In 2008 global trade in commercial services increased 12 percent, to some $3.7 trillion (WTO, 2009).

Given the limited availability of data, the empirical literature on relationships between modes of supply is also relatively limited. Langhammer (2004) calculates revealed comparative advantage (RCA)

[12] This is another open question in the literature. In addition to the growth in the value of FATS, there has also been a marked shift in the composition of global FDI flows (Hoekman and Kostecki 2009). In 1970 finance and trade (distribution) accounted for 65% of the total stock; this dropped to 45% in 2003. Conversely, during the same period the share of telecoms, energy, and business services rose 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.

[13] The relative magnitude of FATS and cross border trade is determined in part by accounting conventions. For example, licensing and franchising are common methods for 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; Helpman 2006). How to measure and value the associated intra-firm services transactions/flows is a major challenge for statisticians – see e.g., the contributions in Reinsdorf and Slaughter (2009).

indices for modes 1 and 3 trade for the EU, Japan and the U.S. 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 U.S. trade in services are similar in some service sectors for the two modes, 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.[14] Lennon (2007) uses aggregate U.S. FATS data to examine mode interactions, while Fillat et al. (2008) work with a panel of IMF and OECD balance of payments and FDI data for several countries for both aggregate services and a number of sub-sectors. Both Lennon and Fillat et al. find evidence of complementarities between cross-border and establishment modes. (The econometric results on cross-mode effects of trade restrictions in Section 4.2 are also consistent with complementarity.)

Related to the literature on interaction across modes is a literature on specific modes. Rugman (1987) and Boddewyn, Halbrich and Perry (1986) are early examples focusing on establishment-based trade. The latter analyze whether the ownership, location and internalization (OLI) paradigm 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 (2007) develop a theoretical model of FDI in business services that predicts that U.S. 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 services 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.[15]

Cross-border trade has become more controversial in policy terms as the absolute value of such trade has grown. To date the number of jobs affected by cross-border 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. (2004) note that much of observed cross-border trade is intra-firm, i.e., flows between a parent and

[14] This may reflect the idiosyncrasies of the international pricing regime for telecom services that lead the U.S. to have the largest outward settlement payments for call termination charges.

[15] Other empirical papers in this vein include Buch and Lipponer (2007), and Kolstad and Villanger (2008). UNCTAD (2005) is a recent survey of services FDI. Sauvant and Zimny (1987) is an early paper stressing the importance of FDI as a mode of supplying services in a foreign market. Also see Norbäck and Persson (2008).

affiliate firms, and that what matters is the net effect. In the data, we see that two-way trade in mode 1 services is important, i.e., there is both "in-sourcing" as well as outsourcing. Francois (1993) provides early evidence from U.S. data that the intensity of two-way cross-border trade in services is closely related to the income level of trading partners, as is the case with goods. Moreover, as the literature on mode interaction highlights, cross-border imports are often associated with establishment sales or 'exports,' so that cross-border imports are complemented by an income flow from outward FDI in services that supports the cross-border imports.

The most recent strand of this literature uses new firm level datasets to examine modes and related import and export patterns. Firm-level data offer the potential to examine linkages between modes of supply and firm efficiency in services, as well as the linkages between outsourcing at firm level, fragmentation of tasks, and the mechanics of services trade. Because datasets in this area are relatively new, much of the literature exists as working papers. It includes research on the performance of German service exporters (Vogel and Wagner 2009), Irish offshoring (Debaere, Görg and Raff, 2009), German and Austrian outsourcing patterns (Marin 2007), patterns of outsourcing by African firms (Arnold, Mattoo and Narciso 2008), the behavior of British service trading firms (Breinlichy and Criscuolo 2009), and services outsourcing by U.S. firms (Liu and Trefler 2008). The results are so far mixed. Breinlichy and Criscuolo report that service exporters are bigger and more productive. They are also more likely to either be part of a multinational enterprise, or else to be foreign owned. In addition, productivity differences relative to strictly domestic firms are smaller than in the case of manufacturing. Vogel and Wagner report that, in the case of German firms, there is no discernable productivity difference linked to exporting. Indeed, exporters may be less efficient. Debaere, Görg and Raff find that more productive firms tend to source more intermediates from abroad, and that the thickness of local services markets is correlated with greater foreign sourcing.

Industry-level and micro data have also been used to assess impact of services offshoring on employment and, to a lesser extent, wages. Amiti and Wei (2005, 2007) estimate industry-level labor demand for the UK and the US, respectively, using offshoring of services as a regressor. They find that service offshoring has a significant positive effect on productivity. They also find a negligible negative effect on employment at the finest level of disaggregation possible, an effect that disappears if a more aggregate classification is used. Using similar techniques but more disaggregated data on employment dynamics for UK firms, Hijzen et al (2007) also concludes there is little evidence for a negative effect of offshoring of services. Indeed, they observe that firms that engage in offshoring have more rapid employment growth than other firms. A similar result is obtained for the US by Jensen (2008), who finds that tradable service activities employ more educated workers and pay higher wages, that services exporters are more prevalent in "high-tech" industries, and that service exporters tend to be larger, more

productive, and pay higher wages.[16] Jensen notes that as the US has a comparative advantage in high tech industries it is less likely to be vulnerable to offshoring of services. This conclusion is supported by employment growth trends: growth in tradable services activities has been similar to growth in nontradable service industries. Geishecker and Görg (2008) is one of the few papers to analyze the effect of services offshoring on wages using firm-level data. Controlling for technological change, sourcing of intermediate components, and individual and industry heterogeneity, they conclude that in the case of the UK, offshoring has contributed to a widening of the wage gap between skilled and unskilled workers.[17]

The offshoring of services that is analyzed in these papers mostly concerns so-called business process outsourcing that occurs via mode 1, for which there often may be little in the way of policy restrictions. This is not the case for some of the other major modes of supply, especially modes 3 and 4. A significant effort has been made in recent years to characterize prevailing policies and their effects, to which we turn next.

4.2. Measuring openness in services

Two different approaches have been taken in the recent literature to assess the magnitude and impact of policy barriers to trade in services. The first involves collection of information on applied policies, converting these into coverage/frequency indicators and using the resulting indices as regressors to explain observed measures of prices or costs (often the price-cost margin is the focus of estimation).[18] 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 is being made of gravity regressions as more comprehensive data on bilateral trade in services have become available.

As measurement efforts have progressed, it has become clear that there are policies that impact on mercantile aspects of market potential, while not necessarily being discriminatory. Related to this, policies can also impact market potential by serving as barriers to entry, or by raising costs once a market is entered. This point is summarized in Table 4.1. Discriminatory barriers to entry, for example, include

[16] See also Crino (2007).

[17] Blinder (2009) estimates that somewhere between 22 and 29 percent of all U.S. jobs are potentially offshorable. He argues that there is little or no correlation between the offshorability of an occupation and its skill level, but that controlling for education, the most highly offshorable occupations were paying significantly lower wages in 2004. Liu and Trefler (2008) argue that in the case of the US, inshoring largely offsets offshoring effects.

[18] 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.

limits on foreign equity ownership shares or direct prohibition of entry by MNEs. Non-discriminatory barriers to entry include a limit on the number of firms or providers in a market regardless of nationality. Regulations that impact on cost and are discriminatory could include additional capital requirements for foreign insurance firms, or pricing regulations specifically targeting foreign insurance providers. The same rules could also be applied on a non-discriminatory basis, so that they raise costs for both foreign and domestic firms. The negotiation of market access in services hinges in part on removing discrimination (applying the national treatment principle) and on the willingness of governments to make concessions linked to (changes in) non-discriminatory regulatory regimes.[19] In federal systems and customs unions where subsidiarity (a vertical delineation of legal competence between central and local or sub-state authority) between central and regional authorities applies to service sectors, the scope for negotiating even on discriminatory regulations can be problematic.

Given the typology in Table 4.1, we use the term liberalization to mean deliberate actions that reduce discrimination. However, reducing discrimination may not result in a greater volume of international transactions. For example 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, technically non-discriminatory policy may affect the operating costs of a foreign entrant differentially from domestic firms (*de facto* discrimination). As a result of these considerations, the literature on services trade policies argues 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 – and/or the *operation* of firms (e.g., see Warren and Findley 2000; Deardorff and Stern 2008). This can alternatively be thought about in terms of whether policies affect fixed or variable costs.

4.2.1. *Openness indexes and trade cost rankings*

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 in regard to the latter databases, (e.g., see Anderson and van Wincoop 2004) the situation is incomparably worse for services. What would appear to be the most obvious source of information on services policies – trade agreements – is at best incomplete and at worst

[19] Under the GATT, governments may not differentiate between domestic and foreign like products on the basis of how they are produced, though they are free to regulate product safety (consumer protection). For services, the mixture of local and foreign production and delivery modes, and the clouding of how firms organize production and what constitutes consumer safety, makes such clear distinctions problematic. Hence, while non-discrimination (rows A.II & B.II in Table 4.1) offers a clear parallel to the GATT treatment of goods, we do not have the same parallel for regulations that impact on a non-discriminatory basis and hence impose limits on the production methods of foreign providers (rows A.I and B.I). In such cases either regulatory change is required to reduce market segmentation (e.g., harmonization) or countries need to accept that their regimes are equivalent (e.g., through a mutual recognition agreement).

misleading given the limited coverage of country commitments.[20] Efforts to directly measure the extent of policy barriers on a sector and cross-country basis generally 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. 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 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 and asymmetric information, such price impacts may be social welfare enhancing. As mentioned, another approach involves inferring trade costs from predicted vs. actual trade flows using gravity models. A logical but relatively unexplored avenue is the integration of openness indexes with gravity-based estimation at the sector level.

Available policy indexes affecting services trade are primarily a result of research supported by the Australian Productivity Commission, and ongoing work at the OECD and World Bank. A number of the price and costs estimates as summarized by Deardorff and Stern (2008) and Dee (2005) are reported in Table 4.2. OECD indexes are summarized in Table 4.3. World Bank estimates are summarized in Figure 4.1 and Table 4.4. The work of the Productivity Commission 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). The estimates summarized in Table 4.2 do not focus specifically on discriminatory policies, but instead 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 samples, 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.

The OECD rankings on policy related to the operation of service sector MNEs include a mixture of restrictions, such as cross-border movement of personnel, ownership limits, and barriers to the establishment and operation of foreign firms. Like the estimates summarized in Table 4.2, the indexes in Table 4.3 also point to generally higher restrictions in developing countries than in the OECD. At the

[20] See Section 5 for more on this. 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.

same time though, some OECD countries (Australia, Canada, and Denmark, for example) have restrictions comparable to the averages prevailing in major developing country economies. In addition, restrictions on service sector MNEs tend to be greater (i.e. more limiting) than restrictions on MNEs in the goods sector. Given that restrictions on services are more likely to be cost raising (including deadweight costs) the pattern of restriction in services implies that potential benefits to service sector liberalization are likely to be large. As noted previously, with liberalization we mean a reduction in discrimination against foreign suppliers, taking as given (assuming) that the realization of regulatory objectives is not affected. Recent progress in characterizing OECD barriers to trade in services is summarized in OECD (2009a).

An ongoing research project by the World Bank is compiling data on actually applied trade policies in services (Gootiiz and Mattoo 2009a, b). To date surveys have been conducted in some 32 developing countries and comparable information obtained for 24 OECD countries, covering five key sectors: financial services (banking and insurance), telecommunications, retail distribution, transportation, and professional services.[21] In each sector, the survey covers the most relevant modes of supplying that service: cross border trade in services (mode 1) in financial, transportation and professional services; commercial presence or FDI (mode 3) in each services sector; and the presence of service supplying individuals (mode 4) in professional services. Results of the survey are summarized in an index of services trade restrictiveness (STRI). For each sector and mode of supply the openness of policy towards foreign suppliers is mapped on a 5-point scale ranging from 0 (for no restrictions) to 1 (highly restricted), with three intermediate levels of restrictiveness (0.25. 0.50 and 0.75). Sector results are aggregated across modes of supply using weights that reflect judgments of the relative importance of the different modes for a sector. For example, mode 4 (temporary movement of suppliers) is important for professional services, but not for telecommunication, where mode 3 is the dominant mode of contesting a market. STRIs are aggregated using sector GDP shares as weights.

The resulting STRIs are summarized in Table 4.4. Figure 4.1 is a scatter diagram based on the same underlying data, where the location of each country reflects the overall restrictiveness of its services trade policies and its per capita income. A number of patterns can be seen. High-income countries are clustered together at the bottom-right, showing that they are quite open overall (though as we see below, some sectors are subject to high discriminatory barriers). There is much more variation in the restrictiveness of services policies for low-income countries. Some of the poorest countries, like Ecuador, Ghana, Nigeria, Senegal, and Mongolia are remarkably open, while some of the most restrictive policies

[21] The sectors are further disaggregated into retail banking, insurance (life, non-life, and reinsurance), road transport, railway shipping, maritime shipping and auxiliary services, air transport passengers, accounting, auditing, and legal services.

today are visible in the fast growing economies of Asia, including China, India, Indonesia, Malaysia, the Philippines and Thailand, as well as in the Middle East, including Egypt, Saudi Arabia and Tunisia.

4.2.2. Gravity estimates

Due to severe data limitations discussed above, gravity estimates for services are still often based on total trade with world or are limited to a (small) number of mostly high-income countries.[22] Sapir and Lutz (1980, 1981) are the first examples of the gravity model applied to balance of payments-based (total) trade data. An early example of gravity model with bilateral services trade is Francois (1993), who worked with early U.S. bilateral data. Recent work by the OECD and EUROSTAT to improve bilateral data makes it possible to develop estimates from actual bilateral trade flows for a relatively broad range of countries. This offers the advantage of isolating the impact of bilateral agreements, and also of allowing more observations per exporter and importer so that general openness (based on importer effect variables) can be better quantified. As an illustration, Table 4.5 presents gravity estimates based on a recent World Bank-sponsored dataset that combines data from multiple sources: bilateral trade data, aggregate trade data, service sector FDI stocks, and service sector FDI flows from the IMF, OECD, EUROSTAT, U.S. Bureau of Economic Analysis, and national sources. We work with trade data in the data cube for recent years, from 2004-2006. These correspond to the time period covered by the OECD FDI restriction indexes in Table 4.3.[23]

The upper panel of Table 4.5 reports the results of probit analysis of zero and non-zero trade flows. The results support the proposition that exporters tend to be based in large, high-income economies. They also support the proposition that both the EU and North American economies tend to export beyond their regional markets. The second panel reports a standard gravity-based set of estimates for bilateral trade volumes. These estimates include importer and exporter fixed effects. Here, we have interacted the OECD nontariff barrier (NTB) indices (from Table 4.3, and mapped to the sectors in Table 4.5) with dummies for regional trade agreements. Because the OECD indexes are general openness measures, we do this to isolate possible trade diversion effects within the EU and NAFTA trade blocks. This would signal some success, on a regional basis, in the integration of markets. What we find is that there is evidence of trade diversion within the EU trade block (at least for business and informatics and telecom services), but not within NAFTA. This points to limited regional services integration in the

[22] See for example Kimura and Lee (2006), Mizra and Nicoletti (2004), Francois, Hoekman, and Woerz (2007), Francois and Wignarajan (2008), OECD (2009b).

[23] For dataset documentation, see Francois, Pindyuk and Woerz (2009). Even more so than in the case of trade in goods, there is a dominance of zeros in the bilateral services trade data. For this reason, we employ a Heckman selection estimator. At one extreme, for business and information and computer and telecom services (IMF Balance of Payments categories 268,269, less 262) we have observations on 5,161 bilateral trade flows between 2004 and 2006, of which 2,134 are non-zero. In contrast, for insurance services (IMF category 253) we have observations on 4,486 bilateral flows, of which only 928 are non-zero.

context of the European Union, but not under current NAFTA services provisions. We return to this issue in our discussion of regional trade agreements on services in Section 5.

The bottom panel of Table 4.5 presents a simple GLM-regression based decomposition of importer fixed effect indexes (from the second panel, where the indexes measure multilateral trade potential) against the NTB indexes in Table 4.3. As the NTB indexes and trade are both in logs, these can be interpreted as NTB trade elasticities, i.e., the percent variation in cross-border or balance-of-payments-based trade observed with percent variation in the NTB indexes. Assuming trading costs vary roughly in proportion with the NTB indexes themselves, these provide estimates of import price elasticities. This last panel of estimates indicates that trade volumes do vary systematically with the OECD measures of NTBs in the service sectors. For example, for business and information services, the EU coefficient in the second panel, compared with the general NTB elasticity, points to partial integration (roughly a one-third offset of trading costs relative to third countries). From the average EU NTB index level for business and information, computer and telecom services, simple calculation implies a 13.3 percent increase in trade volumes within the EU relative to third countries (in those cases where we have trade). These results are consistent with other evidence on regional agreements and their impact on services. Park (2002), for example, employs a cross-section gravity analysis of services trade flows and finds that the EU is the only arrangement where intra-regional (bilateral) trade is more than predicted. For other agreements such as MERCOSUR, NAFTA, and the Andean pact, he finds no positive effect, while even in the EU there is still much scope for further liberalization of trade in services.[24]

4.3. Quantifying the impact of policy

A challenge for the analysis of the effects of policies affecting services trade is to consider the relationships between modes of supply for a specific service and the price/cost impacts on delivered services by foreign providers. The potential implications of trade liberalization in services are tied closely to the mode of liberalization (establishment or cross-border trade) and to underlying market structure. In addition, because many services operate as "margin sectors" (i.e., sectors facilitating real and financial exchange, such as banks in the savings-investment market and transport and distribution firms in the international and domestic goods market), the implications of liberalization are closely tied to gains from trade in other sectors (Francois and Wooton 2009).[25] From the perspective of quantifying trade barriers,

[24] Park (2002) used a method based on total trade in the GTAP trade database to bilateral trade However, as early GTAP data were themselves based on a reverse gravity-type balancing to estimate the global bilateral matrix based on total reported trade by sector, the results were not very informative.

[25] For example, maritime shipping is 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 (Fink, Mattoo and Neagu, 2001). Estimates of trade costs, including the effects of margins, suggest that they are far more important for developing country market access to foreign markets than the tariffs they face – e.g., Djankov, Freund and Pham, 2006; Hoekman and Nicita, 2008).

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.[26]

Yet another challenge is to determine whether observed price-cost margins or estimated tariff equivalents reflect real costs (red tape) or generate rents. This is very important for the estimation of the welfare consequences of policy reform (Deardorff, 2001; Hoekman and Konan, 2001). Konan and Maskus (2006) note that policies that limit entry may have a *competition effect* – local firms charge price markups over marginal cost ($p_i=c_i(1+v_i)$) – 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_i, so that costs exceed global 'best practice': $c_i=c_i*(1+\lambda_i)$. 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 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

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Along these lines, Francois and Wooton (2001b) conclude 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). 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. Yet another avenue for rent capture is distribution services, where estimates suggest that African exporters face trade costs in goods linked to the structure of distribution sectors (Olarreaga and Ozden 2005).

[26] Recent research based on U.S. FATS data (Lennon 2007) and balance of payments trade and FDI data (Fillat et al. 2008, Christen and Francois 2009) point to complementarities between cross-border and establishment trade. The results in Table 4.5 above are also consistent with this characterization of trade and FDI interactions.

transferred to foreign ownership without any change in market structure.[27] 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, and is a matter that has been the subject of much analysis in the public choice literature. Characterization of services barriers as deadweight costs has also been important in CGE-based assessments of potential WTO liberalization and regional integration. An 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 not allow one to disentangle the two effects.[28] Better econometrically-based decomposition of the various price and cost margins linked to international service transactions is an important and sorely needed building block in guiding policy formation. Also important is to determine whether liberalization has implications for the realization of regulatory objectives for a sector. The literature is sometimes rather cavalier in the analysis of discriminatory policies, generally assuming this is not needed to attain regulatory objectives, so that liberalization and the associated increase in competition will not have implications for the realization of these objectives.

Many of the studies discussed below conclude that policy reforms that increase competition result in improved performance of the industries concerned. In turn, the productivity of the services sector is important for the long-term growth prospects of countries.

4.3.1. *Retrospective studies*

One strand of the literature that quantifies the impact of policy in the service sectors focuses on past episodes of liberalization and deregulation. For example, Fink, Mattoo and Rathindran (2003) analyze the impact of policy reform in basic telecommunications on sector performance using a panel data set for 86 developing countries 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. (2003) analyze the impact of specific policy changes relating to ownership and competition on sector performance, as well as whether the sequence in which reforms are implemented affects performance. They conclude that both privatization and more competition lead to significant improvements in performance, but that a comprehensive reform program,

[27] 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).

[28] 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.

involving both of these policies supported by an independent regulator, produced the largest gains: an 8 percent increase in fixed line communication connections 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: the number of new fixed line connections is lower if competition is introduced after privatization, rather than at the same time.

Related to the recent literature on deregulation of telecommunications and supply of associated infrastructure, there is also a mix of panel and case study-based evidence of linkages between information infrastructure quality and pricing and the pattern of trade in goods. A basic message from this literature is that openness in a range of producer or intermediate service sectors is linked to increased export competitiveness for high-technology manufacturing sectors, for which services tend to be an important element of total cost (Fink, Mattoo and Neagu, 2005). Boatman (1992) is an early panel-based assessment of linkages between the relative technology ranking of developing country exports and telecommunications infrastructure in developing countries. With more recent data, Francois, Manchin, and Pelkmans-Balaoing (2009) offer panel-based evidence that variations in communications-related infrastructure translate into significant variations in export performance in a range of developing countries. Working from tariff elasticities, they calculate trade-cost elasticities linked to variations in both communications and trade-related infrastructure. Using a mix of panel data on goods and services trade for 1994-2004, combined with social accounts data (i.e., data on intermediate linkages), Francois and Woerz (2008) provide evidence for the OECD countries similar to Boatman's results for developing countries. In a recent study of the Czech Republic, Arnold, Javorcik and Mattoo (2007) obtain results that reinforce the message from the cross-country panel-based literature. Based on a firm-level panel for the period 1998-2003 and controlling for endogeneity of FDI, they find a significant positive relationship between FDI in services following liberalization and the performance of downstream domestic firms in manufacturing. They conclude that the increased presence of foreign services providers following the opening of the associated services sectors is the most robust services variable affecting TFP in the manufacturing firms in their sample.

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 (2008) 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). Cummins and Rubio-Misas (2006) focus on firms in Spain, analyzing the effects of deregulation and liberalization on consolidation in the Spanish insurance industry. Their sample period 1989-1998 spans the introduction of the EU's Third Generation Insurance Directive, 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 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.

Alongside the research on exports, economic structure and TFP is an associated strand of the literature on linkages between service sector liberalization, on the one hand, and economic growth on the other. After all, from a normative perspective what matters are not the trade or investment effects of policies and policy reform *per se*, but what such changes imply for economic growth and welfare. A number of studies confirm positive dynamic effects from trade liberalization and regulatory reform in services as highlighted in the theoretical literature (See Section 3). In particular, productivity gains can be expected through increased efficiency and competitiveness of the domestic economy, rather than through increases in exports (Nielson and Taglioni 2003). Robinson et al. (2002) stress indirect effects from services sector trade liberalization on the efficiency and output of other sectors in the economy working through inter-industry input-output relations induced by imports of high-quality services. These results, along with related findings by Triplett and Bosworth (2004) and Inklaar et al. (2007, 2008) support the arguments that, in contrast to Baumol's prediction of stagnation through the "Baumol disease" of low productivity growth in consumer services, trade and technical innovation in the producer service sectors may actually feed productivity growth across manufacturing.[29]

Cross-section cross-country regression studies also point to positive linkages between service sector openness and growth in developing countries. For example, 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. Working with a panel of 93 developed and developing countries for the period 1986-1995, Eschenbach, Francois, and Schuknecht (2000) find strong linkages between a range of measures of financial sector openness and growth. Along similar lines, 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. They find that changes in policies towards financial and infrastructure services, including telecommunications, power and transport, are highly

[29] See the discussion in footnotes 6 and 7.

correlated with inward FDI. Controlling for regressors commonly used in the growth literature, they conclude that measures of services policy reform are statistically significant explanatory variables for the post-1990 economic performance of the transition economies in the sample.[30]

While suggestive, much of the empirical literature is plagued by endogeneity problems. This is certainly recognized by most authors and most of the papers discussed above make efforts to address the problem. Problems of selection bias can be controlled for using standard techniques given firm-level datasets that provide information on enterprise and plant characteristics. The availability of such datasets has to a large extent determined the country coverage of the extant literature in this area. A more difficult problem in assessing the impacts of liberalization in services is that such reforms often occur as part of a broader reform, making identification of sector-specific impacts difficult. In some of the papers discussed above, comparative indicators of the overall structure of regimes, such as the OECD's product market regulation measures, are used to help in controlling for the marginal impact of sector-specific reforms. Beyond such control variables, identification of variations in the nature of more broad-based liberalization studies would help, including comparative analysis and case studies of differences in the scope of regulatory reform across a broader set of countries. There is also a need to better understand the relationship between sector-based policy reforms and the sustainability and scope of broader regulatory reform and institutional change. In the case of Eastern Europe, for example, service sector reform took place in the context of far-reaching institutional change made possible by anticipated membership in the European Union. This set of factors will obviously not be present in samples of developing countries in Asia, Africa, or Latin America. This points to potentially important interactions between the gains from regulatory reform and unique exogenous factors that may drive such changes (see Roland 2002).

4.3.2. *Prospective studies*

In addition to the retrospective literature discussed above, there is a parallel strand of the literature that builds on estimates from ex post studies, combined with computational single sector and multi-sector models, to evaluate the impact of prospective policy reform. Such studies are important inputs to the international negotiation and domestic policy reform process by providing an assessment of the possible impacts of liberalization of services trade through different modes.

[30] Analyses of trade in financial services and growth include Francois (1995), Barth, Caprio and Levine (2006), Murinde and Ryan (2003), Claessens (2003), and the contributions to (of) 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 that 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.

Temporary movement of service suppliers through mode 4 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. While efforts to quantify the impact of expanded mode 4 trade are rough, they suggest that tremendous potential gains from trade are associated with liberalization of temporary movement of service suppliers. Working with a multi-region CGE model, Walmsley and Winters (2005) estimate that if OECD countries were to expand temporary access to foreign service-providers by the equivalent of 3 percent 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.[31]

Mattoo and Rathindran (2006) study possibilities for the extension of health services trade under mode 2 through the extension of health insurance coverage. A barrier to such trade is the lack of portability of health insurance in OECD countries. For example, U.S. 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 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.[32]

Another theme in this strand of the literature is the application of CGE models to examine liberalization of cross-border trade and FDI in services. For example, 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

[31] 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).

[32] Quite recently, the European Union implemented regulations designed to extend health insurance coverage across all EU Member States. Apart from Obermaier (2009), we are unaware of studies focusing on the likely impact of these regulatory changes on the volume of health services trade within the European Union.

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. 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.[33]

Rutherford, Tarr and Shepotylo (2005) 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 includes FDI (mode 3) as well as Dixit-Stiglitz endogenous productivity effects. 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 (2006) 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.

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. Clearly, 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. In an overview of the prospective quantitative literature on the potential impacts of services trade liberalization, Whalley (2004) argues that a basic problem with this literature is that the heterogeneity of service activities is typically neglected, even though this may have important implications. He focuses on two central issues: the representation and measurement of barriers to services

[33] See also Jensen et al. (2008); Francois, van Meijl and van Tongeren (2005); Lejour, Rojas-Romagosa and Verweij (2008) and Balistreri, Rutherford, and Tarr (2009) for similar analyses.

trade in individual countries, and the interpretation of results from model-based analyses quantifying the effect of trade liberalization in services. Drawing on numerical estimates, Whalley (2004) and Huang, Whalley and Zhang (2005) argue that 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.

Given the prevalence of increasing returns and imperfect competition in many services industries, the welfare effects of partial liberalization will depend on market structure and the contestability of the service industries concerned and the nationality of ownership of firms. However, in the services context the prevalence of imperfect competition may well imply significant 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).

A basic message that emerges from the prospective literature 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.

5. The Political Economy of Liberalization

In contrast to the extensive literature on the political economy of merchandise trade policy, very little attention has been devoted to the political economy of corresponding policies affecting trade in services markets. The nascent literature in this area has been motivated by multilateral negotiations in both the WTO and assorted regional trade agreements.[34] A key stylized fact here is that both the WTO and most regional (bilateral) agreements have not been effective mechanisms for liberalizing access to services markets. Instead, policy reforms have mostly been unilateral.

5.1. Liberalization commitments in the GATS

Commitments made by WTO Members on services take the form of a partial listing of sectors that are subject to market access and national treatment obligations unless specific measures are exempted. In

[34] A recent formal contribution on the political economy of services trade negotiations is Fung and Siu (2008); Hoekman, Mattoo and Sapir (2007) discuss the Doha negotiation status quo from a political economy perspective.

practice 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. WTO Members may decide not to make any commitment for a specific sector if they wish: complete freedom to restrict market access or national treatment may be retained by writing "unbound" into the relevant cell of the document that spells out the applicable disciplines. The scheduling approach that is used is illustrated in Table 5.1. The implication is that schedules only provide incomplete information on prevailing policies. Only if a Member writes "none" into its schedule for a sector/mode of supply is there a binding commitment not to restrict market access and to abide by national treatment. Commitments in many regional trade agreements emulate the structure that has been defined by the GATS. The exceptions are agreements modeled on NAFTA, which covers all services and policies, except for sectors and specific policy measures that are listed in annexes. This so-called negative list approach has the advantage of much greater transparency than the positive list approach used in the GATS.

Empirical efforts to "quantify" the coverage of GATS and regional agreements that emulate the GATS structure have tended either to use a simple count of sectors/modes where commitments are made, or else to employ a weighting scheme that is a function of the type of commitment made. Hoekman (1996) offered the first index-based assessment along these lines. He concluded that coverage of sector-specific commitments on national treatment and market access was 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, though it did offer some benefit linked to binding of lock-in of then current market access conditions.[35]

Although it is unclear what "unbound" means – actual policy may be quite liberal in practice – in characterizing commitments this is not relevant. Quite simply, "unbound" just 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 5.1 above), and a weight of 0.5 to commitments where restrictions are specified. This methodology was used by Hoekman (1996) and has been adopted and subsequently extended by numerous authors. Table 5.2 illustrates the type of data that results for the EU. While specific indices are not economically meaningful in isolation, taken together 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

[35] See Francois (1997) and Francois and Martin (2004) for a more general discussion of policy binding in trade agreements. The Uruguay Round's contributions in agriculture, like services, were also largely limited to partial security of market access conditions rather than actual liberalization.

customs union for services (Langhammer 2005). Adlung and Roy (2005) updated Hoekman's assessment of the coverage of commitments and conclude little progress has been made in extending the coverage post-1995.[36] Gootiiz and Mattoo (2009a) provide a recent comprehensive compilation and analysis of GATS commitments and compare these with new data on the restrictiveness of applied policies.

Very little work has been done on the determinants of commitments in the GATS. Research on this has concluded that variables such as per capita income and market size are correlated with more extensive commitments (Hoekman, 1996) but there is little support for endowment-based predictions of the overall depth and coverage of commitments (Roy, 2009). Egger and Lanz (2008) argue that theory suggests that countries that are capital scarce should make more commitments because the potential gains from trade (liberalization) are largest for such nations, but conclude that the evidence is not supportive of this hypothesis. Analysis of the determinants of commitments is more complex than for goods (the GATT) because of the need to explicitly consider the multiple modes through which trade can occur and map this to the endowments (comparative advantage) of countries. It is also important to differentiate predictions regarding preferences for applied trade policies from commitments on such policies. The theory predictions regarding determinants of trade policy preferences pertain to actual (applied) policies, so it is not necessarily surprising that they do not do well in explaining commitments in the GATS. As discussed below, to do this we need first a theory of what services trade agreements are designed to achieve.

5.2. Trade agreements as domestic policy reform anchors

Trade agreements can potentially help governments implement reforms that enhance the contestability of services markets but that are opposed by politically powerful vested interests. This is because international trade agreements offer a way for breaking domestic deadlocks by mobilizing export groups to support reform. An important question is how large the incentives are for countries to use such mechanisms in the case of services. In the case of goods trade there is an extensive literature that identifies several possible motivations for governments to engage in trade negotiations. This includes first and foremost the terms of trade (market access) rationale: countries negotiate away the negative terms-of-trade externalities that are created by the imposition of trade restrictions (Bagwell and Staiger 1999). Another strand of economic literature argues that trade agreements offer a commitment mechanism to governments (Tumlir, 1985, Maggi and Rodriguez-Clare 1998; Ethier, 2007). By committing to certain rules that bind policies, i.e., "policy reform anchors" (Francois, 1997), government can sometimes use external regional and multilateral commitments to make domestic reforms programs more credible. In

[36] 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.

principle these rationales should carry over to services in that groups that benefit from better access to export markets are induced to throw their weight behind import liberalization. The puzzle is that services did not figure prominently in the Doha round of WTO trade negotiations. This is a puzzle given the evidence discussed previously that policy barriers and the potential gains from such liberalization are significant.

Achieving domestic reform of services markets through external trade agreements has proven difficult in practice. 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.

Ex post empirical analyses of impacts of what is generally called deep integration in the literature have documented that this can generate significant gains. 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 find significant markup reductions for wholesale and retail trade, financial services and real estate, reflecting the impact of accession on regulatory barriers to trade in these sectors. The paper by Cummins and Rubio-Misas (2006) discussed previously is another empirical assessment of the sectoral effects of liberalization of entry and harmonization of regulatory regimes in the EU context.

These analyses illustrate the potential gains from deep integration. Less clear is whether and to what extent international cooperation is needed to realize the potential gains. Francois (2005) investigates the implications of EU accession for regulatory reform in Turkey, focusing in particular on the transportation sector. Francois estimates how far Turkey is from "best practice" as defined by OECD "standards" for the transport sector—not just in the regulatory domain but also in terms of "performance" – by using factor analysis to identify commonalities across countries and regulations. He concludes that accession to the EU is unlikely to exert significant pressure on Turkey to restructure the sector as a result of either general market access conditions or regulatory convergence requirements. The reason is that Turkey has to a large extent undertaken the required reforms and put in place the required regulatory frameworks unilaterally.

Eschenbach and Hoekman (2006b) analyze the extent to which the EU 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, many of the countries that did not have a prospect of joining the EU made far-reaching WTO commitments both in terms of breadth of sector coverage and depth (absence of limitations). These dwarf even those of the most "ambitious" developed countries, something that is in part a reflection of the fact that many of the countries concerned acceded to the WTO after 1995. Eschenbach and Hoekman 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.

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. [37] The more recent vintage regional trade agreements have greater sectoral coverage than the GATS, in part reflecting the use of a negative list approach to coverage in a number of them. 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 the agreements 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 agreements live up to what theory "predicts" they achieve: a lock-in device, credibility of reform, etc. (Roy, Marchetti and Lim, 2007). Very little information also exists on the implementation of agreements, including whether commitments are applied on a discriminatory basis to apply only to member countries.[38]

One factor explaining the limited use of trade agreements by governments to support and anchor policy reforms in services may be that export interests are weaker than in manufacturing or agriculture because services are more difficult to trade (Hoekman, Mattoo and Sapir, 2007). In OECD countries the ratio of cross-border exports to output is on average over six times less for services than for goods. In many instances, potentially tradable services are simply not traded at all. The barriers – whether natural or man-made – are prohibitive. As a result, the number and political weight of import-competing sectors may greatly exceed that of export-oriented service sectors interested in obtaining access to foreign

[37] 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 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.

[38] Fink and Jansen (2009) argue that in practice many of the services provisions included in regional agreements will be applied in a nondiscriminatory fashion as a result of relatively liberal rules of origin.

markets. Another, related, problem is that in those areas where there are strong potential export interests, there are very high barriers that are politically very difficult to reduce using the *quid pro quo* exchange mechanisms that drive trade negotiations. This is the case for the one mode of supply that is of great export interest to many developing countries – mode 4. Liberalization of this mode is strongly resisted in most countries for a variety of reasons, including noneconomic.[39] As most developing countries have relatively small markets, and often are already open to FDI, they have little to offer in return for liberalization of this mode.

5.3. Bargaining incentives

Given that FDI is a significant mode of supplying nontradable services, potential direct investors may have a strong 'export' interest and supply the traditional political economy dynamics that have driven goods trade negotiations. However, such investors may not perceive that trade agreements are needed. Blanchard (2007) develops a formal model that provides some insights into one possible explanation for the lack of strong support by export lobbies for the GATS process. She argues that the existence of (need for) FDI attenuates the need to use trade agreements to deal with terms of trade externalities. If firms are able to engage in FDI and do so, as more firms originating in any country-pair invest in each others markets, governments will have less incentive to manipulate tariffs and other policies in an effort to improve their terms of trade. The reason is that doing so, assuming it is feasible and effective, will benefit the foreign firms located in a host market, as well as domestic firms. The greater the foreign (FDI) share, the lower the incentive of the host government to use border policies, and the less need to use the reciprocity mechanism in trade negotiations. An implication is that the larger are two-way FDI stocks, the more inclined governments are likely to be to lock these in. The GATS schedules of commitments are on average most far-reaching and comprehensive for mode 3, consistent with the analytical framework developed by Blanchard, presumably reflecting at least in part the large two-way FDI flows among the OECD countries, complemented by the desire on the part of many developing countries to attract FDI.

Another factor that may result in there being less of a need to use reciprocal bargaining (trade agreements) may be that opposition by domestic firms and labor to the prospect of increased competition from foreign firms may not be as strong in services as in goods. Hoekman and Konan (2001) note that the adjustment costs associated with service-sector liberalization may be lower than in the case of goods because of the absence of corner solutions. If services continue to be produced locally because of proximity requirements, there will be less need for cross-industry employment re-allocation following reform. The gross negative impact on labor employed in services from liberalization is likely to be lower (given that foreign entrants will often use FDI and employ mostly nationals). Indeed, the net impact on

[39] Saint-Paul (2007) develops a theoretical model that illustrates the possible political economy rationales for the political resistance to mode 4 liberalization, stressing the role of imperfect (segmented) labor markets.

labor may be perceived to be positive insofar as total employment opportunities are expected to expand. Support for reform by businesses that would benefit from higher quality and lower-prices services is more likely to be stronger. Indeed, those that liberalize first may have a strategic advantage – creating further incentives to pursue domestic reforms. Narrow reciprocity, in the form of 'equivalent' concessions being offered by trading partners, may then be seen to be less of a priority for countries than has been the case for merchandise trade liberalization (Hoekman and Messerlin 2000).

Konan and Maskus (2006) argue that comprehensive reforms spanning both services and goods trade will generate less need for factors to be reallocated across industries than will arise if policy is limited to just goods liberalization alone. Given that the focus of both theory and practice has been predominantly on merchandise trade reform, 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. Numerical analysis suggests that it may be best to proceed on a broad front, targeting both goods and services markets, rather that proceeding sequentially.[40] Such broad-based reform will inherently be difficult, if not impossible, to agree to in a trade negotiation context.

One reason for this is the above-mentioned concerns relating to regulatory autonomy and the pursuit of regulatory objectives. The prevalence of domestic regulation complicates and constrains use of the reciprocity mechanism for services because it is very difficult to design multilateral rules and national commitments in a way that clearly separates or distinguishes between measures that are protectionist and measures that have a good domestic efficiency or social equity rationale. A critical challenge then is how to differentiate between legitimate concerns relating to quality and performance, and regulatory requirements that simply constitute barriers to entry, creating rents for incumbents by raising prices or needlessly raising costs for firms. Marginal *quid pro quo* changes to domestic regulatory policies may not enhance welfare. Indeed, they could easily lower it. Regulators may therefore be concerned that market access negotiating dynamics could adversely affect their ability to design and implement regulatory norms that maximize national welfare.

[40] In addition to cross-sector adjustment issues, sequencing may also be important because of interactions between market structure and alternative modes of supply within sectors. Francois and Wooton (2001a) introduce this point, examining the interaction between different modes of market access liberalization in services. Their results 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. Evidence of such effects includes Cho (1988), who analyzes 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 while maintaining a cartel, in the process strengthening the coalition opposing more general (MFN) liberalization.

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 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 (2006) project that the original 2004 Services Directive could increase intra-EU services trade by 30 percent to 62 percent and direct investment in services by 18 percent to 36 percent. The revised directive that was adopted in 2006 is unlikely to have such effects given that key aspects of the initial proposal were removed, in particular acceptance of home country regulation.[41] The EU experience illustrates the difficulty for (unwillingness of) polities to converge on common norms and to allow for "regulatory arbitrage" even in situations where in principle all are agreed that common minimum standards exist.

An additional, regulation-related complicating factor in the calculus of reform is equity. There are linkages between liberalization and the strength of domestic regulatory institutions on the one hand, and, on the other, the impact on access to services by poorer households in developing countries. In cases like mobile telecommunications, a positive relationship has been observed in many developing countries because initial conditions were bad, i.e., few households had access. However, in other areas, like financial services, unless improved regulatory measures are put in place, liberalization may have an adverse effect on access to credit for rural areas and the poor (Mattoo and Payton 2007). Putting in place mechanisms to ensure better access to services post-liberalization is important from an equity perspective. It is also important from a political economy perspective to bolster support for implementing efficiency enhancing policy reforms and sustaining them over time. Absent actions to address regulatory weaknesses, countries may not be in a position to fully realize the potential benefits of trade reforms in services *or* goods (Hoekman and Mattoo 2007).

These considerations suggest 'standard' mercantilist bargaining may not do much to support significant exchange of liberalization commitments. Matters are compounded by the fact that successful liberalization in developing countries will often require substantial strengthening of domestic regulatory

[41] See also De Bruijn, Kox and Lejour (2008). Lejour and Verheijden (2004) 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.

institutions and related infrastructure. An implication is that additional instruments may be needed in trade agreements beyond market access concessions, such as financial transfers or 'soft law' forms of cooperation that focus on improving regulation and related enforcement capacity. Many observers have expressed concerns that trade agreements may deprive regulators of the ability to achieve social objectives. This is a factor explaining the reluctance of many countries to make commitments in trade agreements or to 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. A precondition for trade agreements to work as a policy reform anchor is that there is first agreement on a framework of regulatory principles. This raises an important general question: whether the WTO or regional integration agreements are the appropriate forum to discuss regulatory standards, or whether this is a subject that is better addressed unilaterally or through other forms of international cooperation.

Virtually all of the formal theoretical work on trade agreements has centered on trade in goods, and mostly assumes that trade is in final products. Whether the characteristics of services have implications for the design of trade agreements is an important area for research and may help to better understand why trade agreements – with the exception of the EU, which is *sui generis* – do not appear to have played much of a role, if any, in generating significant policy reforms. The Blanchard (2007) analysis is relevant in this connection for mode 3-related policies. More generally, account needs to be taken of the impact of regulation and "non-border" policies in services. Antràs and Staiger (2008) develop a model that provides some insights into the types of factors that need to be included in analyses of trade agreements that cover services. They note that in the presence of offshoring, governments need to worry about additional policies that may give rise to negative externalities (beyond those now covered in standard trade agreements) and confront a more complex decision problem (objective function). Their conclusion is that it will no longer be possible for trade agreements to deliver the objectives of negotiators through general rules such as reciprocity and non-discrimination – additional rules will be required.

6. Summary and Ruminations: Directions for Research

The literature on trade in services has grown significantly since the first papers were written in the mid 1980s. The factors that affect 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, uncertainty still prevails on fundamental issues: the determinants of trade in services, the extent to which countries restrict trade, the impact of past or prospective liberalization and technological changes that allow ever more services (tasks) to be traded, the political economy determinants of services trade policies and regulation, and the implications for the role and design of trade agreements.

The paucity of comparable cross-country, time series data on services output and prices, the limited availability of bilateral trade and investment flow statistics, the very patchy coverage of data on sales of services by foreign affiliates of multinational enterprises and services provided through temporary movement of service suppliers (workers), and the fact that firm-level datasets are just recently becoming available (for a limited number of countries), all help explain the correspondingly sparse empirical literature. 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 by governments—which in turn will depend on advocacy from and willingness by industry to support the collection of the statistics. A concerted, internationally cooperative effort to rectify the data situation through the launching of (officially supported) surveys to collect data on a regular basis is a precondition for more rigorous empirical analysis. Such analysis can have an important bearing on economic development policy. Many of the questions that have been touched upon in this survey are directly relevant to ongoing debates concerning the appropriate design of trade strategies and efforts to diversify economies. Policy discussions and analysis often is still very much centered on what can be called a product view of the world. The focus is on identifying and supporting non-traditional manufacturing industries or on diversifying into the product space that rich(er) countries have specialized in. An analytical framework that recognizes that much trade is now in tasks and in services, not tangible products, could do much to help countries identify more effective interventions to exploit potential comparative advantages and expand employment and economic growth.

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 or what types of activities and tasks that they have a comparative advantage in. For this reason, more research is needed on the interaction between services trade policies and regulation, the availability of new or cheaper services through trade and FDI, and the productivity of both firms and farms. Questions here include the magnitude and direction of spillovers and backward linkages resulting from greater FDI and trade in services, and the role of services (and services policies) in expanding product variety more generally. A major challenge confronting empirical research assessing the effects of liberalization and services policy reform more generally is to deal with both endogeneity and the context and sustainability of regulatory reform. There are important questions, for example, about the viability of big-bang versus incremental reforms, and the role of exogenous factors in driving and anchoring internal reform. The literature on incremental reform argues that gradual erosion of rents and the consequent creation of counter-lobbies may sustain policy along otherwise unfeasible paths of regulatory reform (Wei 1997). At the same time, exogenous factors (like prospective EU Membership) may drive simultaneous reforms across a broad range of sectors, making it problematic at best to empirically isolate/quantify the marginal contributions of sector-specific reforms (Roland 2002). There is

no obvious solution to this problem, except continued support for a multi-pronged empirical approach involving a mix of case studies and careful cross-country and panel-based econometrics.

Diversifying the export bundle of countries is something the recent trade literature has identified as potentially important for growth (Feenstra and Kee 2004, 2008). Much remains to be done in understanding the role of services and services trade in achieving such diversification. An example is the relative importance of markups and margin costs as a determinant of overall trade costs confronting firms in a given country or region, and the resulting implications for both policy and public investment – e.g., pro-competitive regulation and competition law. There has recently been extensive work on trade costs (e.g., Anderson and van Wincoop, 2004; Djankov et al. 2006) but this has mostly neglected the role of services as a determinant of such costs. The focus on quantification of the level of such costs needs to be complemented by efforts to "unpack" the different sources that determine them, many of which will be services-related (e.g., logistics, transport, etc.).

Sector-focused studies reveal that it makes little sense to speak of "the service sector." Different services play diverse roles in the economy, will have distinct market structures, and differ in terms of the relative importance of the alternative channels through which markets can be contested by foreign firms. An implication for economy-wide modeling and analysis of policy reform is that these idiosyncrasies must be taken into account. Along these lines, more research is needed on interactions between different modes through which firms in a given industry can supply foreign markets, as this will determine in practice which policies are a binding barrier to trade and which may be redundant. More generally, such knowledge is needed to identify the appropriate sequencing and design of liberalization – including complementary regulation.

One area where progress is being made, but more is needed, is enhancing the representation of traded services in CGE models, especially the multi-country/region models used to analyze the *ex ante* impacts of (global) policy reforms or shocks. For the most part, these do not include services trade or investment, beyond disembodied cross-border trade that occurs through telecommunications networks or through the movement of consumers and providers – e.g., tourism or management consulting services. This reflects absence of appropriate data on services transactions and 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 'backbone' network services such as telecommunications, transportation and finance. 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. There is great potential for synergy between econometric research on the interaction between the various ways that markets can be contested – arms-length trade versus movement of providers or consumers/buyers – and development of proper frameworks for numerical models.

Yet another priority area for research is measurement and ranking of policies that discriminate against foreign providers, as opposed to domestic regulation that applies to all firms whatever their nationality. The latter may be the more important source of inefficiency/costs in that the associated "rectangles" may be much larger than the "triangles" (deadweight losses) generated by the efficiency costs of 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 (regulatory) policies. In empirical assessments of the magnitude of such additional costs more attention needs to be given to the question whether reforms will affect the ability of governments to attain regulatory objectives – something that too often is simply assumed not to be a problem.

Much more work is also required to understand the political economy of services policies and reform. The stylized fact here is that most reform has been unilateral or autonomous and not been driven by trade agreements (Hoekman, 2008). We need to deepen our understanding of why trade agreements have attracted less attention and support by firms than has been the case when it comes to trade in goods. A first step here is to improve our understanding of the problem(s) that trade agreements spanning services are meant to solve. It is not clear that for international transactions that involve factor movement (i.e., trade in services) the standard explanations in the literature – first and foremost the terms of trade rationale – necessarily apply (e.g., Antràs and Staiger, 2008). Given that in services market access and regulation are closely intertwined, in many markets the key need may be to reform regulatory policies that impede contestability. Whether this can be facilitated through trade agreements is still very much an open question. As discussed above, 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 as 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, like outright bans and licensing, but also 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. More analysis of these matters is critical to provide better guidance on the appropriate design of trade agreements that span services.

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. Moreover, the recent trend has been toward more restrictive policies towards FDI (Sauvant, 2009). 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 better identify and quantify the extent to which policies create rents, as opposed to raising real costs.

Many of the research areas noted above will benefit from extending recent theoretical models of firm heterogeneity and the boundary of the firm to cover services trade. Such theory is needed to better guide the empirical literature and to provide deeper insight into the interaction between policy and firm performance. In addition, better mapping from firm-level theory to industry level patterns in trade and FDI in services offers the prospect of high payoffs as more data become available.

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Table 2.1: Services, % share of value added

	1977	1987	1997	2007
High Income OECD	58	63	69	74
High Income non-OECD	…	56	62	66
Upper Middle Income	49	49	62	64
Middle Income	40	43	52	59
Low & Middle Income	40	43	51	59
Lower Income	…	43	45	48
HIPC	43	44	43	46
World	55	60	66	70

Source: World Development Indicators database, 2009. Note that some 2007 values are extrapolated. Regional definitions are based on World Bank classifications.
HIPC stands for heavily indebted poor countries.

Table 3.1 GATS-speak

Mode 1:	direct cross-border trade in services
Mode 2:	movement of the customer to the country of the provider
Mode 3:	sales of services through an offshore affiliate (legal person)
Mode 4:	(temporary) movement of (natural) persons to provide services

Table 4.1: A Typology of Policies Affecting Foreign Services Transactions

		I	II
		Impact on entry/establishment	Impact on operations
A	A. Non discriminatory	E.g., A limit of three mobile phone providers permitted to operate in the country	E.g., all retail banks required to maintain a minimum level of capital, independent of type of legal entity
B	Discriminatory	E.g., nationality quotas for managers of affiliates; minimum equity stake required for national investors; economic needs tests	E.g., foreign insurance firms not permitted to offer certain types of coverage or product innovations; price controls

Table 4.2: Estimates of price/cost impacts of services policies

			Developed countries		Developing countries	
Sector	**Source and period covered**	**Measure**	**Simple average**	**N**	**Simple average**	**N**
Maritime shipping	Clark, Dollar and Micco (2004); 2000	Percentage impact on shipping costs of mandatory use of certain port services	2.0	21	5.6	32
Air transport (APEX economy fares)	Doove et al. (2001); late 1990s	Estimated increase (%) in fares over an estimated "free trade" level for a set of bilateral routes	30.6	23	63.9	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	23	16.8	12
Retail food distribution	Kalirajan et al. (2000);	Impact on costs of barriers on foreign establishment	2.7	12	2.3	6
Retail banking	Kalirajan et al. (2000); 1996-97	Percentage impact on net interest margins of discriminatory policies	11.8	7 (a)	31.8	9
Engineering	Nguyen-Hong (2000); 1996	Impact of barriers to FDI on price cost margins (%)	5.2	14	8.4	6
Mobile telecom	Doove et al. (2001); 1997	Price impact (%) of regulatory policies relative to a notional benchmark regime	26	24	21	18
International telecom	Doove et al. (2001); 1997	Price impact (%) of regulatory policies relative to a notional benchmark regime	73	24	34	18

Notes: (a) Includes the EU-15 as one observation.
Source: Data compiled in part from tables reported in Deardorff and Stern (2008) and Dee (2005).

Table 4.3: Openness index for operations of MNEs

	OECD	United States	EU-27	Non-OECD	China	India
Business services	1.4	0.4	1.3	1.6	2.1	6.2
Fixed line telecom services	1.8	0.2	1.1	2.2	4.4	3.0
Mobile telecom services	1.7	0.2	1.0	2.1	3.7	3.0
Construction	0.7	0.2	0.4	1.2	1.4	2.2
Distribution	0.7	0.2	0.4	1.3	3.7	4.7
Insurance	1.2	1.6	1.0	1.9	3.0	3.7
Banking	1.4	2.4	1.0	1.8	4.4	3.0
Hotels & Restaurants	0.7	0.2	0.4	0.7	1.4	0.5
Air transport	3.6	5.0	3.4	3.8	4.4	4.4
Maritime transport	2.4	2.4	1.8	2.4	4.4	0.5
Road transport	1.0	0.2	0.7	1.7	1.4	0.5
Electricity distribution	2.8	1.2	3.1	4.3	5.6	1.4
Manufacturing	0.7	0.2	0.5	1.1	3.4	1.8
Overall (goods and services)	0.8	1.1	1.1	1.2	3.4	1.6

Source: OECD 2007. Original indexes range from 0=open to 1=closed.

Indexes as reported here have been converted to ln(1+index) and so range from 0=open to 6.7=closed.

Table 4.4: Services trade restrictiveness index (STRI), 2009

Region	South Asia	East Asia & Pacific	Middle East & North Africa	Sub-Saharan Africa	Latin America & Caribbean	Eastern Europe & Central Asia	OECD	World
All sectors	39.6	38.7	37.3	20.2	16.2	15.9	18.8	23.6
of which:								
Financial	33.7	32.6	39.6	16.3	16.6	19.0	3.9	16.7
Telecom	25.0	32.1	17.5	16.7	5.6	6.3	8.5	13.4
Retailing	33.3	25.0	25.0	4.2	2.8	0.0	6.8	10.7
Maritime	36.3	43.5	34.0	14.6	16.7	12.2	8.9	18.9
Air transport	50.0	35.7	36.5	46.7	23.6	50.0	24.3	32.3
Professional	57.5	62.9	54.5	43.3	35.4	30.6	45.6	46.3
Mode 1	43.4	45.8	31.0	19.1	24.8	21.2	24.0	27.8
Mode 3	40.2	37.9	40.0	19.2	14.6	13.3	18.3	23.0
Mode 4	64.6	74.1	63.8	57.3	54.2	56.3	61.1	61.3

Notes: Data are based on a survey of 56 countries. Indices are simple averages of country-level STRIs. Financial services include banking (deposit, loan in mode 1 and retail banking in mode 3 and life, non-life insurance in mode 1 and mode 3 and reinsurance in mode 1 only, telecommunications include fixed and mobile telecom in mode 3, maritime services include maritime shipping in mode 1 and mode 3, maritime auxiliary services in mode 3, air passenger services include air transport in mode 1 and mode 3, and professional services include accounting, auditing, and legal advisory services in domestic and international law in mode 1, 3, and 4. Regional coverage-South Asia: India, Sri Lanka, and Pakistan; East Asia & Pacific: China, Malaysia, Philippines, Mongolia, and Thailand, Middle East & North Africa: Tunisia, Morocco, Egypt, Saudi Arabia, and Jordan; Sub-Saharan Africa: Ghana, Tanzania, Kenya, South Africa, and Senegal; Latin America & Caribbean: Trinidad and Tobago, Venezuela, Argentina, Ecuador, Colombia, Mexico, Chile, and Brazil; Eastern Europe & Central Asia: Russia, Ukraine, Poland, and Lithuania; OECD: the United States, Canada, Australia, New Zealand, Japan, Korea Republic, United Kingdom, Ireland, Germany, France, Netherlands, Denmark, Austria, Greece, Italy, Portugal, Spain, Finland, Hungary, and Czech Republic, Sweden, and Belgium.

Mode 1 covers banking-deposit and loan, insurance-life, non-life and reinsurance, air passenger, maritime shipping, and professional services, mode 3 covers banking, insurance, telecommunications, retailing, maritime shipping and auxiliary services, air passengers, and professional services, mode 4 covers professional services (accounting, auditing, and domestic and international legal advisory services). Data on mode 1 air passengers derived from the WTO database on bilateral air service agreements.

Source: Gootiiz and Mattoo (2009a).

Table 4.5: Services Imports – Heckman 2-stage selection model with NTB elasticities
Bilateral services imports 2004-2006

	Business and ICT	Insurance	Finance	Con-struction	Personal, cultural, recreational	Communi-cations
corresponding IMF and GTAP sectors	GTAP: 54 obs BOPS: 268,269, less 262	GTAP: 53, isr BOPS 253	GTAP: 52, ofi BOPS: 260	GTAP: 46, cns BOPS: 249	GTAP: 55, ros BOPS: 287	GTAP: 51, cmn BOPS: 245
First stage probit, *Pr*(trade)						
log of bilateral distance	0.144***	-0.101***	0.040	-0.204***	-0.049	-0.136***
	(5.259)	(-2.997)	(1.354)	(-6.221)	(-1.527)	(-4.578)
log of importer FDI stocks	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	0.000
	(-3.871)	(-4.987)	(-3.913)	(0.480)	(-3.265)	(0.608)
log of importer per-capita income	-10.273*	-3.700	-4.765	-11.358	-4.249	-3.173
	(-1.911)	(-0.516)	(-0.728)	(-1.466)	(-0.537)	(-0.479)
log of exporter per-capital income	0.133***	0.149***	0.226***	-0.031	0.118***	-0.005
	(6.107)	(5.448)	(9.259)	(-1.133)	(4.432)	(-0.220)
log of importer GDP	10.142*	3.459	4.659	10.055	2.839	2.016
	(1.889)	(0.486)	(0.712)	(1.305)	(0.360)	(0.303)
log of exporter GDP	0.318***	0.294***	0.205***	0.175***	0.208***	0.153***
	(10.87)	(8.028)	(6.399)	(5.041)	(5.977)	(4.840)
partners are both in EU	-1.038***	-1.078***	-0.609***	-0.665***	-0.851***	-0.881***
	(-18.67)	(-15.66)	(-10.24)	(-9.985)	(-12.87)	(-14.49)
partners are both in NAFTA	-0.604***	0.298**	-0.253**	-0.812***	-0.221*	-0.289**
	(-5.475)	(2.108)	(-2.197)	(-6.290)	(-1.836)	(-2.477)
Observations	5161	4486	4714	4604	4536	4714
Pr >0	0	0	0	0	0	0
Chi-Sq	2137	1829	1218	1374	1372	1667
Second stage: *ln*(*M*), value of imports as dependent variable, fixed effect estimates						
log of bilateral distance	-1.184***	-1.071***	-0.881***	-1.222***	-0.660***	-1.336***
	(-23.69)	(-13.26)	(-9.629)	(-8.587)	(-6.492)	(-14.64)
common border	0.275*	-0.000	0.774***	0.730***	0.692***	0.686***
	(1.676)	(-0.00102)	(3.797)	(2.739)	(2.971)	(3.791)
common language	0.358***	0.474**	0.561**	0.263	0.417*	0.072
	(2.844)	(2.105)	(2.527)	(0.595)	(1.710)	(0.319)
EU dummy interaction w/OECD NTB index	0.956**	0.235	-0.646	2.761	-0.929	0.017
	(2.500)	(0.354)	(-0.867)	(1.596)	(-0.468)	(0.0358)
NAFTA dummy interacted w/OECD NTB index	-0.119	-0.928	-2.441	7.138	-4.762	2.045*
	(-0.159)	(-0.940)	(-1.385)	(0.782)	(-1.172)	(1.881)
trans-Atlantic dummy interacted w/NTB index	1.792**	4.839***	1.825	-14.089**	3.228	0.079
	(2.085)	(3.366)	(1.373)	(-2.510)	(0.863)	(0.101)
inverse Mills ratio from 1st stage probit	1.001***	0.620**	1.437**	0.475	1.464***	0.054
	(3.842)	(2.178)	(2.544)	(0.650)	(2.813)	(0.105)
Observations	2134	928	1035	780	800	1116
R-squared	0.829	0.803	0.777	0.753	0.753	0.813
Post-Selection Model: fixed effect decomposition for NTB elasticities						
NTB trade elasticity	-3.178**	-3.180***	-2.041**	-4.205**	-8.712***	-0.577
	(-2.490)	(-2.700)	(-1.984)	(-2.108)	(-2.763)	(-0.701)
Number of importers	49	43	49	41	39	43

Robust t-ratios and z-ratios given in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Note: NTB elasticities are based on GLM regression of importer fixed effects against the NTB index.
As both trade and NTBs are in logs, this gives is an elasticity.

Table 5.1: Structure of a GATS schedule of specific commitments for a given service activity

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.

Table 5.2: GATS Commitments by EU-15 Member States, by Mode of Supply

	Market Access				National Treatment				
Mode:	1	2	3	4	1	2	3	4	All
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
U.K.	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).

Figure 2.1: World Trade in Commercial Services in 2006, shares
(Balance of Payments basis, from IMF and OECD data, excluding transport and travel)

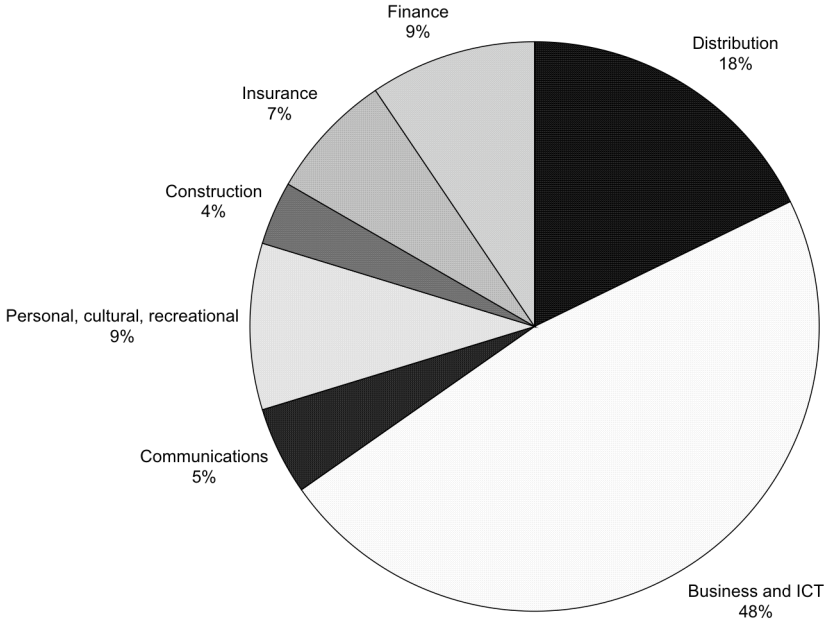
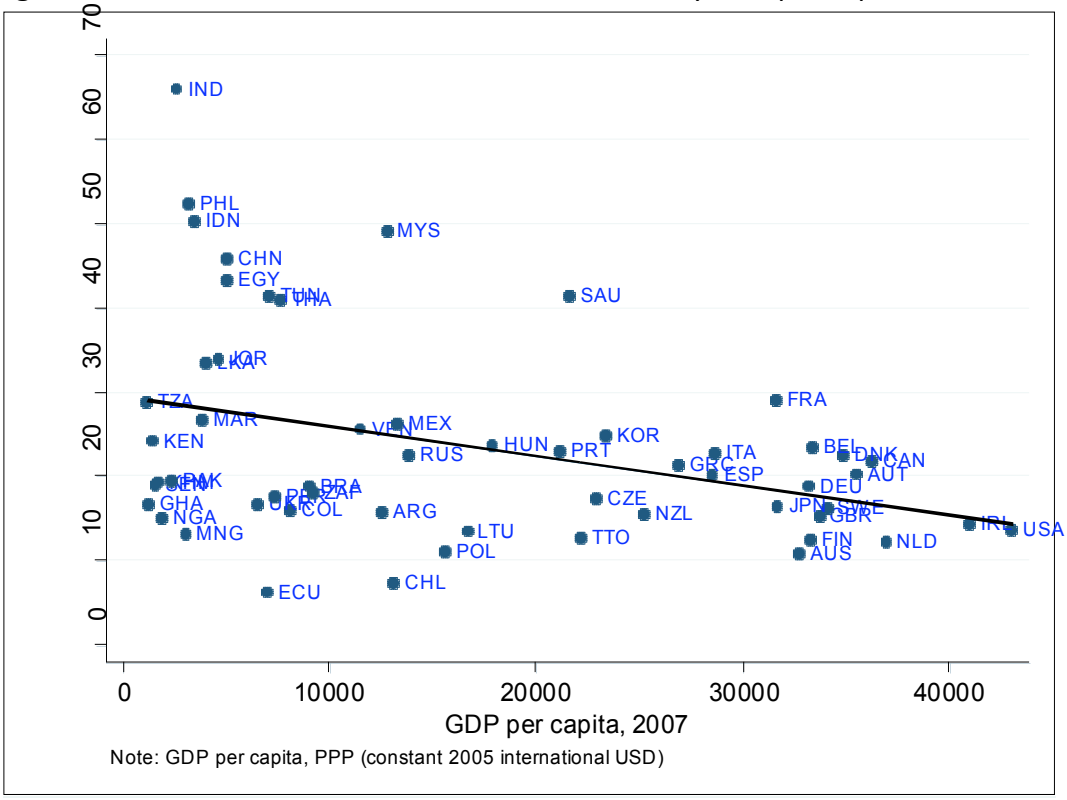


Figure 4.1: Restrictiveness of Services Trade Policies by GDP per capita, 2007



Source: Gootiiz and Mattoo (2009a).

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