

## Will Asian Economies Gain from Liberalizing Trade in Services?

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### I. INTRODUCTION

Rapid advances in information and communications technologies (ICT) and regulatory reforms have worked in tandem to increase the scope and importance of service transactions in the global economy. Service activities have constituted a large and growing share of production, employment, investment and trade, which in turn has led to profound structural changes in many countries, especially in middle and upper income developing countries (World Bank, 2001, 2002).<sup>1</sup>

While the merchandise exports of developing economies doubled in value during 1980–1999, services exports increased fourfold. By 1999, commercial services trade accounted for nearly one-quarter of world trade and an estimated one-half of global foreign direct investment (FDI) stocks to all regions except Sub-Saharan Africa (World Bank, 2001, 2002). Yet, the proportion of services in overall international trade appears to be smaller than its corresponding share in aggregate output and employment. On this basis, services have conventionally been considered to be “less tradable” than manufactured or even agricultural products.

Part of the reason for the apparently low share of services in international trade may relate to definitional and data problems. In particular, trade in services often requires the simultaneous movement of factors of production (labour and capital in the form of FDI). In other words, several important modes of supply of services are not considered in the conventional trade statistics on a balance-of-payments basis.<sup>2</sup> In addition, some services such as transportation, insurance, and finance are vital in facilitating the production process and in bringing manufactured and agricultural goods to the market. Other types of services are directly embodied in goods but may not explicitly be taken into account (e.g. design, software, repair work and other technical expertise). Available statistics may therefore severely downplay the actual magnitude of international trade in services as many transactions go

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<sup>1</sup> As classified by the World Bank according to income, these cover newly industrializing economies (NIEs) in East Asia, oil producing countries in the Gulf region and Israel.

<sup>2</sup> The World Bank (2002) has noted that “the available evidence suggests that commercial presence has been the most dynamic mode of services supply in recent years” (p. 72).

unrecorded.<sup>3</sup> In addition, figures for merchandise trade may be artificially inflated because of the high share of re-exports when in fact entrepot trade is a service transaction.

Following Bhagwati (1984) and Sampson and Snape (1985), trade in services may be classified on the basis of the location of the service providers according to the following fourfold typology<sup>4</sup>: (a) Mode 1: cross-border supply which are services supplied from one country to another (e.g. international telephony); (b) Mode 2: consumption abroad which refers to firms or consumers making use of a service across a national frontier (e.g. tourism and health services/medical patients); (c) Mode 3: commercial presence which occurs when a foreign company establishes a subsidiary or branch abroad to provide services in another country (e.g. foreign banks or telecommunications firms setting up operations in a foreign country); and (d) Mode 4: presence of natural persons that involves individuals travelling from their own country to supply services in another country (e.g. consultants, design or software engineers, or the temporary transfer abroad of employees of a multinational). In the first kind of transaction production and consumption are “separated” or “splintered”, while the other modes require the mobility of factors of production, consumers or both.

TABLE 1: INTERNATIONAL TRANSACTIONS IN SERVICES BY MODES OF SUPPLY, 1997

GATS mode of supply	Category	Value (\$ billion)	Cumulative share (%)
Mode 1	Commercial services (excluding travel)	890	41.0
Mode 2	Travel	430	19.8
Mode 3	Gross output of foreign affiliates	820	37.8
Mode 4	Compensation of employees	30	1.4
TOTAL	–	2,170	100.0

*Note:* Modes 1, 2 and 4 are derived from balance-of-payments data.

*Source:* Karsenty (2000).

Table 1 offers an indication of the global scale of each of the four modes of international service transactions. It is apparent that Mode 3 appears to be where the most multilateral negotiation activity has taken place thus far. In a recent study, Carzaniga (2002) notes:

“Recent estimates, based on limited empirical information, suggest that mode 3, commercial presence, accounts for more than half of world trade in services and mode 1, cross-border trade, for about a fourth, while mode 2, consumption abroad contributes less than one-fifth. Mode 4 was found to be nearly insignificant, accounting for just over 1% of world services trade” (p. 3).

<sup>3</sup> In recent years, several multilateral institutions have taken significant steps to try to improve the quality of cross-border services transactions. See for instance, the UN-ESCAP’s website on this issue: <<http://esa.un.org/unsd/tradeserv/>>, as well as that of the World Bank: <[http://www1.worldbank.org/wbiiep/trade/services\\_data.htm](http://www1.worldbank.org/wbiiep/trade/services_data.htm)>.

<sup>4</sup> The General Agreement on Trade in Services (GATS) has since adopted this classification.

The relative insignificance of Mode 4 is not surprising as this mode appears to be “significantly more restrictive than conditions for other modes” (Carzaniga, 2002, p. 3; also see Hoekman, 2000, p. 45).<sup>5</sup> Insofar as commercial presence is particularly susceptible to not being captured in balance-of-payments accounts (Dee, Hardin and Holmes, 1999), the Mode 3 channel of cross-border trade in services is in all likelihood severely underestimated.

Despite statistical imprecision, Primo Braga (1996) has declared that the “internationalization of services is viewed as being at the core of economic globalization” (p. 34). It is in recognition of its rising importance that a multilateral framework for liberalizing trade and investment in the service sector was conceptualized in the form of the General Agreement on Trade in Services (GATS) initiated under the aegis of the World Trade Organization (WTO).<sup>6</sup>

To what extent do emerging economies stand to gain from liberalizing trade in services? The purpose of this article is to monitor the extent of trade liberalization in two key infrastructural services in five East Asian economies (namely, China, Indonesia, Malaysia, South Korea and Thailand), and to assess, on the basis of available evidence, the likely consequences of liberalization.<sup>7</sup>

The layout of the article is as follows. Section II briefly examines the theoretical case for liberalizing trade in services. Section III records the state of play with respect to the liberalization of trade in telecommunications and financial services in the five Asian economies. Section IV reviews the empirical evidence on the effects of liberalizing trade in services and attempts to provide some indication of its implications in Asia. Particular reference is made to Mode 3 supply of services by way of commercial presence. Finally, section V offers a few concluding remarks about the design of future policy.

## II. LIBERALIZING TRADE IN SERVICES: A BASIC REVIEW OF THEORY

There have been several theoretical studies on the role of services in the production process and international trade (e.g. Markusen, 1989; also see survey by

<sup>5</sup> Carzaniga (2002) summarizes the Mode 4 GATS commitments made by countries. Winters (2002) discusses the economic implications of liberalizing Mode 4 trade. To try and move the liberalization of this mode forward, Hoekman (2000) suggests:

“one could envisage a safeguard instrument that is limited to mode 4 liberalization commitments, and is explicitly aimed at providing OECD country governments with an insurance mechanism that can be invoked if liberalization has unexpected detrimental impacts on their societies” (p. 45).

<sup>6</sup> See Hoekman (2000), Hoekman and Mattoo (2000) and Mattoo (2001) for recent discussions on the GATS.

<sup>7</sup> Why do we focus on these two sectors? A clue is provided by Hoekman (2000), who notes:

“business services, consultancy, and distribution do not appear to be among the most protected sectors..., and the various measures of openness suggest barriers to competition are higher in transportation, finance, and telecommunications. These are also basic ‘backbone’ inputs that are crucial to the ability of enterprises to compete internationally... This suggests negotiating attention should focus on financial services, telecoms and transport” (p. 39).

Insofar as the key transportation services such as air and maritime have been discussed extensively elsewhere (for instance, see Fink, Mattoo and Neagu (2000) and World Bank (2002), ch. 4 and references cited within), we focus on telecommunications and financial services.

Sapir and Winter, 1994). At the risk of generalizing, and notwithstanding some theoretical curiosities, the broad conclusion of these studies is that the positive static welfare effects of liberalizing trade in goods extends to services as well. Thus, an appropriately timed and sequenced liberalization of the service sector ought to provide the conventional Harberger Triangle welfare gains by reducing, if not entirely eliminating, the wedge between domestic and foreign prices, as well as permitting the “rationalization of service activities along the lines of comparative advantage” (Deardorff, 2001). Other authors have suggested that protectionism may impose additional costs once its implications for monopoly power and the costs of rent-seeking and various distortions are taken into account (Tullock, 1967). Romer (1994) argues that the non-rivalry of many imported inputs means that protectionism can impose large costs. On top of this, there are the dynamic gains from trade consequent upon additional competition (Grossman and Helpman, 1991).

A number of countries, including developing ones, have a comparative advantage and niche export opportunities in certain service activities, particularly professional and business ones (such as computer and office services), tourism, health, construction and transport. This would imply that they have a substantial stake in an orderly liberalization of global service markets. Moreover, the fragmentation of the production of goods depends in part on reduced transactions costs (i.e. insurance, transportation and ICT services) and is therefore facilitated by liberalization of trade in services (Deardorff, 2001). Further welfare gains could accrue to consumers from the availability of broader product variety of specialized producer services as well as enhanced product quality (World Bank, 2002).

However, the benefits from services liberalization are far from automatic. If deregulation and internationalization takes place prematurely, i.e. in a weak or ineffective regulatory and supervisory environment, there may be severe negative consequences. As is increasingly recognized, the issue is not one of whether to open up and integrate with the global economy in a market-consistent manner, but when and how to do so. Nowhere is this more pertinent than for the service sector. This said, what is meant by “effective regulation” will vary based on the sector under consideration.<sup>8</sup> For instance, effective regulation in the case of the telecommunications sector refers to pro-competitive regulation, while in the financial service sector it refers to prudential regulation (Mattoo, Rathindran and Subramanian, 2001).<sup>9</sup>

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<sup>8</sup> Admittedly, it might be difficult to distinguish between regulations that are necessary to minimize possible financial and economic disruptions and those that may have a protectionist goal or effect.

<sup>9</sup> In fact, concerns about loss of monetary and financial controls led to an insertion of an “Agreement of the Annex on Financial Services”, which includes a provision to the effect that member countries are free to take measures for prudential reasons to protect the integrity and stability of the financial system. This clause is generally referred to as the “prudential carve-out” clause (also see Box 3).

### III. THE LIBERALIZATION OF INFRASTRUCTURAL SERVICES IN FIVE ASIAN ECONOMIES

#### A. TELECOMMUNICATIONS

Despite a common move to greater telecommunications openness, policy choices have varied markedly among the Asian economies (Fink, Mattoo and Rathindran, 2001).

Table 2 summarizes the specific GATS commitments by the Asian economies in telecommunications services. Korea is the only country to have committed to liberalize almost all telecommunications services. China has made commitments in all but two basic telecommunications services, namely, telex and telegraphic services, though it remains to be seen whether it does in fact liberalize these services within the given time frame. Malaysia too has made commitments in all but two value-added telecom services, namely, electronic data interchange (EDI) and on-line information and/or data processing services. In comparison, Thailand has offered commitments in only two sectors of value-added telecom services. Indonesia has also been rather cautious in liberalizing value-added telecom services compared to basic services, “partly due to the fact that the state-owned enterprises PT Telkom (sole local and long-distance service carrier), PT Indosat and PT Satelindo (exclusive providers of international services) are among the few firms that remain financially viable amidst the floundering political and economic environment” (Abrenica and Warren, 1999, p. 8).

TABLE 2: SUMMARY OF SPECIFIC GATS COMMITMENTS IN TELECOMMUNICATIONS SERVICES

	a.	b.	c.	d.	e.	f.	g.	h.	i.	j.	k.	l.	m.	n.	01.	02.	03
China	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X
Indonesia	X	X	X	X	X			X	X					X	X	X	X
Korea	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Malaysia	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X
Thailand	X			X	X	X	X			X				X			X
Total	69	63	64	59	47	59	59	55	51	57	48	46	45	43	65	57	46

*Key:* a. Voice telephone services; b. Packet-switched data transmission services; c. Circuit-switched data transmission services; d. Telex services; e. Telegraph services; f. Facsimile services; g. Private leased circuit services; h. Electronic mail; i. Voice mail; j. On-line information and data base retrieval; k. Electronic data interchange (EDI); l. Enhanced/value-added facsimile services; m. Code and protocol conversion; n. On-line information and/or data processing; 01. Terrestrial-based mobile; 02. Satellite-based mobile; 03. Other.

*Source:* WTO (1998).

Many of the economies in Asia persist with wide-ranging restrictions on foreign equity ownership. Fink, Mattoo and Rathindran (2001) conclude that:

“While the traditional public monopoly is becoming a rarity, most governments seem reluctant to forego discretionary policy-making and delegate choices completely to the market. One important battle seems to be largely won: in most cases, privatization has been accompanied by the introduction of some measure of competition. But governments have been reluctant to allow unrestricted entry, and in most cases there are restrictions on the extent of private and foreign ownership, at least in the main incumbent. There is a high degree of variability in the pattern of regulation both in terms of the degree of autonomy and the domain of the regulator. Many governments have also had difficulty in establishing credibility for their reform programs” (p. 7).

In short, there has been clear preference for a policy of “managed competition” in many Asian countries. However, Fink, Mattoo and Rathindran (2001) observe that there are relatively larger welfare gains to be had from an increase in competition than from a simple change of ownership. A case against increased competition is hard to make, but there may be technical limitations to competition (the scarcity of radio spectrum required for the provision of mobile telecommunications services is a case in point), or there may be significant economies of scale (due, for instance, to substantial fixed costs). Governments appear more willing to open up the mobile network segment of telecommunications, as there is less political need to protect incumbent operators with state ownership.<sup>10</sup>

## B. FINANCIAL SERVICES

Reviewing the financial service commitments made by a number of developing and transition economies, Mattoo (1999) reaches the following conclusion, which is just as applicable to the five Asian economies under consideration here:

“In broad terms, governments have adopted three different approaches to the financial services negotiations, assuming that they participated at all. These are: (i) to bind the status quo, which may have been arrived at after liberalization, either unilateral or in the context of the negotiations; (ii) to make binding commitments that represent less than the status quo in policy terms; and (iii) to promise future liberalization, which may or may not have been planned prior to the negotiations. These categories are not necessarily mutually exclusive when the set of a country’s commitments is taken as a whole, nor is it always easy to determine the precise category in which a policy position should fall. The distinctions are useful, however, in thinking about the relationship between WTO negotiations and domestic liberalization processes” (p. 23).

Table 3 summarizes the specific GATS commitments by the Asian economies in financial services. As with several other countries, the Asian economies have bound their obligations at less than the status quo. For instance, notwithstanding Korea’s recent aggressive steps towards liberalization, its GATS commitments in the area of

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<sup>10</sup> The regional mobile market is expected to receive a further impetus from the introduction of third generation (3G) mobile technology launched initially in Japan.

TABLE 3: SUMMARY OF SPECIFIC GATS COMMITMENTS IN FINANCIAL SERVICES

Countries	Insurance		Banking			Securities			Other			
	Life	Non-life	Reinsurance	Intermediation	Deposits	Lending	Trading in Forex	Trading in derivatives	Trading in securities	Under- writing	Asset management	Financial information
China	X	X	X	X	X	X	X	X	X	X	X	X
Indonesia	X	X	X	X	X	X	X	X	X	X	X	X
Korea RP	X	X	X	X	X	X	X	X	X	X	X	X
Malaysia	X	X	X	X	X	X	X	X	X	X	X	X
Thailand	X	X	X	X	X	X	X	X	X	X	X	X
Total	69	73	78	57	82	83	62	44	68	63	63	58

Source: WTO (1998).

TABLE 4: GRANDFATHER PROVISIONS IN GATS SCHEDULES ON BANKING AND INSURANCE SERVICES IN SELECTED ASIAN ECONOMIES

Country	Provision
Foreign equity-related	
Indonesia	<i>Banking and insurance:</i> Share ownership of foreign services suppliers is bound at the prevailing laws and regulations. The conditions of ownership and the percentage of share ownership is stipulated in the respective shareholder establishing the existing individual joint venture shall be respected. No transfer of ownership shall take place without the consent of all parties in the joint venture concerned.
Malaysia	<i>Banking:</i> Entry is limited to equity participation by foreign banks in Malaysian-owned or controlled commercial and merchant banks with aggregate foreign shareholding not to exceed 30 percent, but the 13 wholly foreign-owned commercial banks are permitted to remain wholly owned by their existing shareholders.
Legal form-related	
Indonesia	<i>Banking:</i> Existing branches of foreign banks are exempted from the requirement imposed on new entrants to be in the form of locally incorporated joint venture banks.
Malaysia	<i>Insurance:</i> Branching is only permitted for direct insurance companies with aggregate foreign shareholding of less than 50 percent but companies are permitted to maintain their existing network of branches (see also foreign equity-related provision above).
Thailand	<i>Banking:</i> While the establishment of new branches is subject to discretionary licensing, existing foreign banks that already had the first branch office in Thailand prior to July 1995 will each be permitted to open no more than two additional branches.

Source: Mattoo (2001).

foreign portfolio investments have been less than those it made to the OECD. For the other countries, the binding of commitments below status quo is a reflection of governments' dual objectives of trying to encourage foreign investments into the financial sector while simultaneously avoiding a repeat of the turmoil and instability following the premature and ill-sequenced liberalization prior to the regional crisis of 1997–1998, not to mention providing some degree of protection to the incumbent national suppliers from immediate competition. As further evidence of this reluctance to move forward aggressively in its liberalization programme, Table 4 summarizes the various grandfathering provisions (which guarantee the ownership and branching rights of incumbent firms) undertaken by the Asian economies. As Mattoo (1999) further observes:

“It is evident that grandfathering was primarily an Asian phenomenon. The grandfathering provisions reflect the relative emphasis in these negotiations on guaranteeing the rights of incumbents. They provide the benefits of security to investors who are already present in the market rather than to new investors” (p. 28).

This having been said, all the economies, especially Korea and Thailand, have continued to take important steps towards relaxing foreign equity limitations. There appears to be a clear policy preference for promoting foreign equity investments (ownership/divestment) over the promotion of market competition.

#### IV. LIBERALIZING TRADE IN SERVICES: THE EMPIRICAL EVIDENCE

While theory suggests a number of potential benefits from a well-timed and sequenced approach to liberalization of trade in services, what do empirical studies tell us about the magnitude of these gains? Notwithstanding the recent “revisionist view” of Rodriguez and Rodrik (2001), the bulk of the empirical literature using cross-country data has found that international trade in goods has been growth-inducing.<sup>11</sup> While several studies have unearthed a positive association between trade and growth, most are unable to conclude anything about causality *per se*. Does openness lead to growth, or does growth lead to openness? This is the focus of an important study by Frankel and Romer (1999). The authors have undertaken a cross-section of 100 countries since 1960. They deal with the potential endogeneity problem of the trade variable by instrumenting it with a set of variables used in the estimation of the gravity model for trade flows. While results vary on the basis of the specific data set and equations used, openness in general does have a statistically and economically significant effect on growth.

What about the case of services? In view of the acute data problems, it should not be surprising that there is a dearth of empirical studies on the impact of services liberalization on growth. For reasons discussed above, one might expect, *a priori*, that the liberalization of services trade ought generally to have a relatively larger effect on growth than merchandise trade. This is particularly so since services have hitherto remained relatively protected.

##### A. THE ECONOMETRIC EVIDENCE

Mattoo, Rathindran and Subramanian (henceforth Mattoo *et al.*) (2001) study the impact of liberalization of the financial and telecommunications sectors on overall economic growth. Given the paucity of studies on this issue as well as the influence that it has apparently had on the World Bank (see World Bank, 2002), it is worth summarizing the main elements of the study in some detail.

Mattoo *et al.* create an index based on a set of openness indicators for both sectors. In the case of telecommunications, the index is a lexicographic representation of three policy variables, namely competition, foreign ownership and regulation, with the first element deemed as most important followed by the second. The first two variables indicate the degree of international competition. A proxy for regulation is included in recognition of the importance of effective regulation in “ensuring access for rival service suppliers to the networks of incumbents on reasonable terms” (p. 11). A

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<sup>11</sup> Rodriguez and Rodrik (2001) argue that “there is a strong negative relationship in the data between trade barriers and economic growth, at least for levels of trade restrictions observed in practise”. Srinivasan (2001) provides a strong critique of the revisionist view. Other recent studies that have found a positive associate between openness and trade include Coe and Hoffmaister (1997), Dollar (1992), Edwards (1993, 1998) and Sachs and Warner (1995). See references in Rodriguez and Rodrik (2001).

TABLE 5: METHODOLOGY FOR CONSTRUCTING TELECOMMUNICATIONS INDEX OF OPENNESS<sup>(a)</sup>

Rank	Market structure	Ownership (FDI)	Independent regulator
9	Competitive	FDI allowed	Yes
8	Competitive	FDI allowed	No
7	Competitive	FDI not allowed	Yes
6	Competitive	FDI not allowed	No
5	Not competitive	FDI allowed	Yes
4	Not competitive	FDI allowed	No
3	Not competitive	FDI not allowed (private)	Yes
2	Not competitive	FDI not allowed (public)	Yes
1	Not competitive	FDI not allowed	No

*Note:* (a) Rankings are assigned on a basis of a lexicographic scheme discussed in detail in source.

*Source:* Mattoo, Rathindran and Subramanian (2001).

country's telecommunications sector is thus considered to be "fully liberalized" if the index value is 9 (Table 5).

As with the telecommunications sector, the liberalization index for the financial service sector consists of three components. The first two are similar, i.e. competition and foreign ownership, but the third is an index for capital controls which is included in recognition of the close nexus between financial sector openness and capital account deregulation (see Bird and Rajan, 2001).<sup>12</sup> The reason for excluding regulation in this sector as a measure of openness is that it "does not have the same competition promoting role that it does in the telecommunications sector" (p. 12).<sup>13</sup> A country's financial sector is considered to be "fully liberalized" if the index value is 8 (Table 6).

TABLE 6: METHODOLOGY FOR CONSTRUCTING FINANCIAL INDEX OF OPENNESS<sup>(a)</sup>

Rank	Market structure	Foreign equity permitted (%)	Capital controls (Dailami Index)
8	Competitive	≥ 50	≥ 1.6
7	Competitive	≥ 50	< 1.6
6	Competitive	< 50	≥ 1.6
5	Competitive	< 50	< 1.6
4	Not competitive	≥ 50	≥ 1.6
3	Not competitive	≥ 50	< 1.6
2	Not competitive	< 50	≥ 1.6
1	Not competitive	< 50	< 1.6

*Note:* (a) Rankings are assigned on a basis of a lexicographic scheme discussed in detail in source.

*Source:* Mattoo, Rathindran and Subramanian (2001).

<sup>12</sup> Since no data are available on national policies on competition and foreign ownership, Mattoo *et al.* infer them from the countries' commitments under the GATS (see section III). As some countries (such as Brazil) have *de facto* liberal regimes, the authors make appropriate adjustments to the rankings to reflect this.

<sup>13</sup> Mattoo *et al.* go on to note that "the omission may nevertheless be serious because the quality of banking and prudential regulations is of paramount importance in addressing systemic risk" (p. 12).

Having developed the indices for services liberalization, Mattoo *et al.* run a series of cross-country regressions for a sample 60 countries (37 of which are developing countries) for the period 1990–1999. They estimate the following regression specification:

$$G_j = \alpha + \beta X_j + \gamma R_j \text{ for } j = 1, \dots, N$$

where  $G_j$  is the average annual growth rate of per capita GNP (adjusted for purchasing power parity) between 1990 and 1999 in country  $j$ ,  $\alpha$  is a constant term,  $X_j$  is the vector of standard growth controls for country  $j$ ,<sup>14</sup>  $R_j$  is a vector of the openness to trade in services for country  $j$ , and  $N$  represents the number of countries in the sample.

Considering indices for the telecommunications and financial sectors individually, Mattoo *et al.* find that both indices entered with the right sign (i.e. positive), with both being statistically significant at least at the 10 percent level. Results are consistent if the sample is limited to developing countries. Thus, there is evidence that the greater the degree of telecommunications and especially financial sector openness, *ceteris paribus*, the greater will be average output growth. The evidence of the growth-inducing effects of financial sector openness (i.e. the Schumpeterian thesis of banking sector development facilitating economic growth through technological change and capital accumulation) has also been confirmed by a number of other studies (Beck, Levine and Loayza (2000); King and Levine (1993); and Levine, Loayza and Beck (2000)). In the case of telecommunications, Roller and Waverman (2001) also find a positive linkage between a country's telecommunications infrastructure and its economic growth.

Table 7 reproduces results for the case of "complete liberalization" in both sectors, i.e. interaction of liberalization dummies of both sectors with the variable taking on a value 1 if both sectors are fully liberalized and zero otherwise. As can be seen, the coefficient is once again statistically significant with a value of 0.015. This suggests that countries that have fully liberalized both their telecommunications and financial service sectors have tended to grow by an average 1.5 percentage points faster than others in the 1990s. The magnitude is even higher when the sample is limited to developing countries.

All in all, the Mattoo *et al.* study provides strong evidence that financial and telecommunications liberalization is positively associated with growth. Both sectors are key determinants of growth in modern economies, not only in their own right (i.e. share of GDP), but also in terms of being important in the production and exchange of other goods and services. The empirical results are not dissimilar to the econometric studies of merchandise trade liberalization and growth discussed previously, though a

<sup>14</sup> The standard growth controls used by Mattoo *et al.* include the natural log of per-capita GNP in 1990 (the convergence variable), investment rate (lagged value), schooling ratio (human capital), government consumption to GDP ratio (as a proxy for government size and magnitude of government induced distortions), the inflation rate (as a proxy for macro-economic imbalances), proxy variables for political and institutional stability, geographical and regional dummies, and an index of tariff and non-tariff barriers.

TABLE 7: IMPACT OF FULL LIBERALIZATION OF TELECOMMUNICATIONS AND FINANCIAL SERVICES:  
REGRESSION ESTIMATES DEPENDENT VARIABLE: GROWTH OF PER CAPITAL GNP, 1990–99

Independent variable	Whole sample		Only developing countries	
	(1)	(2)	(3)	(4)
Natural log of initial GNP (1990)	−0.019*** (−2.69)	−0.024*** (−3.49)	−0.018** (−2.28)	−0.022*★ (−2.49)
Primary education enrolment (1990)	0.052** (2.10)	0.042* (1.92)	0.038 (1.53)	0.035** (1.44)
Lag of investment to GDP ratio (1980–89 average)	0.166*** (3.75)	0.205*** (3.36)	0.227*** (3.00)	0.306*** (3.11)
Government consumption to GDP ratio (1990–99 average)	−0.209*** (−3.46)	−0.165*** (−3.04)	−0.261*** (−3.92)	−0.235*** (−3.37)
Average annual inflation rate (1990–99)	−0.001 (0.73)	−0.002 (−1.56)	−0.0004 (−0.33)	0.001 (−0.87)
Dummy variable for tropical countries	−0.026*** (−4.04)	−0.030*** (−4.33)	−0.031*** (−3.93)	−0.037*** (−4.25)
Dummy for Sub-Saharan Africa		−0.009 (−1.05)		0.005 (0.41)
Dummy for Latin America countries		0.012 (1.44)		0.15 (1.40)
Quality of institutions	−0.0004 (−0.26)	0.002 (0.84)	−0.002 (0.80)	−0.001 (0.31)
Dummy variable for political stability	−0.003 (−0.45)	0.001 (0.08)	−0.003 (−0.39)	0.001 (0.13)
Dummy variable for full liberalization of both sectors	0.015* (2.18)	0.015** (2.21)	0.025** (2.14)	0.028** (2.64)
IMF goods trade restrictiveness index	−0.004*** (−3.70)	−0.004*** (−3.32)	−0.005*** (−3.07)	−0.004*** (−2.49)
Constant	0.170*** (4.17)	0.190*** (4.33)	0.182*** (3.83)	0.185*** (3.32)
R-squared	0.67	0.71	0.76	0.78
Number of observations	59	59	37	37

Note: \*, \*\*, \*\*\* indicate statistical significance at the 10 percent, 5 percent and 1 percent levels, respectively. The brackets figures indicate t-statistics with Huber–White heteroskedasticity consistent standard errors.

Source: Fink, Mattoo and Rathindran (2001).

comparison of gains by way of services and merchandise trade liberalization requires using a computable general equilibrium (CGE) model.<sup>15</sup>

#### B. THE ECONOMY-WIDE EFFECTS OF FURTHER LIBERALIZATION

While the preceding discussion alludes to the sector-specific gains to be reaped from reducing trade restrictions, the determination of intersectoral and economy-wide impacts requires a computable general equilibrium framework (Hoekman and Primo Braga, 1997). Such a framework is especially important when analysing the economic impact of the service sector because of its role as an input into the production of many goods.

In this section we consider the results from a particular multi-sector, multi-regional computable general equilibrium model of world trade and investment. The model covers 19 regions (spanning Asia, North and South America and the European Union) and three sectors (agriculture, manufacturing and services). The theoretical structure of the model encompasses both FDI and portfolio investment. It is closely based on the well-known Global Trade Analysis Project (GTAP) model (Hertel, 1997) with FDI (FTAP) and other modifications to the structure included to account for services liberalization.<sup>16</sup>

Incorporating FDI allows us to examine the comprehensive removal of restrictions on all modes of service supply, including restrictions on services delivered by way of FDI (Mode 3).<sup>17</sup> As noted previously, this delivery mode is in all likelihood severely underestimated in the balance-of-payments data. The theoretical literature on FDI and trade in services remains thin, Markusen, Rutherford and Tarr (2002) being an exception. Summarizing the Markusen–Rutherford–Tarr study, Hoekman (2000) notes that:

“Their research finds that FDI is beneficial to host economies—not only because it is a source of new knowledge and competitive pressure, but also because FDI in services can increase the demand for skilled workers and help host countries to begin to produce and export advanced products... This work suggests that the rationale for ownership restrictions may be weak if it has the effect of inhibiting entry. It is crucial to identify and consider the rationales for policies that limit competition in services” (p. 34).

Returning to the FTAP model, in effect, the price/cost effects of trade protectionism noted above are modelled as tax equivalents to capture the direct effects of current services trade restrictions. Restrictions on establishment are modelled as

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<sup>15</sup> For instance, in an early CGE study, Brown, Deardorff, Fox and Stern (1996) estimated that the welfare gains from Uruguay Round cuts in industrial tariffs could have been three times higher if services barriers had simultaneously been reduced by 25 percent.

<sup>16</sup> The treatment of FDI in the FTAP model is in turn based on Petri (1997). Dee and Hanslow (2000) offer detailed discussions of the FTAP model. Descriptions and documentation related to the model are available on the website of the Productivity Commission of Australia's website: <<http://www.pc.gov.au>>.

<sup>17</sup> Dee, Hardin and Holmes (1999) and Markusen, Rutherford and Tarr (2002) discuss the issue of services trade and FDI as they relate to computable general equilibrium (CGE) models.

taxes on capital while those on ongoing operations are modelled as taxes on the output of FDI firms and the exports of firms supplying through other modes of delivery. Using the FTAP model, Dee and Hanslow (2000) reach the following set of conclusions with regard to the projected gains in real income about a decade after complete liberalization has taken place (accounting for transitory adjustment effects). Note that the results are static in nature, showing only the direct impact of trade liberalization (and not the ensuing impact on savings, investment and therefore growth).

First, the world in general is projected to be better off by around US\$ 260 billion annually as a result of eliminating all post-Uruguay Round trade restrictions.<sup>18</sup> Second, about half these gains are projected to come from liberalizing services trade, US\$ 80 billion from the liberalization of manufactures, and the remainder from liberalizing agriculture. The much larger gains attributed to services trade liberalization are in line with the theoretical priors outlined earlier, as are the predictions that the largest gains go to the regions with the highest services trade barriers.

The results found by Dee and Hanslow (2000) are in broad agreement with those of other general equilibrium frameworks which tend not to be as sophisticated as the FTAP model (Findlay and McGuire, 2001). But all these general equilibrium results may understate the gains from liberalizing services as not all the modes through which services are supplied are necessarily taken into account. Dee and Hanslow (2000) conclude that, with regard to partial services trade liberalization, the greatest global benefits would derive from the liberalization of non-discriminatory or market access restrictions. In addition, the removal of all restrictions on establishment would yield a larger total benefit than removing all restrictions on ongoing operations.

Verikios and Zhang (2001) also use the FTAP model but focus specifically on the impact of liberalizing the financial and telecommunications service sectors. They make use of more recent estimates of trade barriers (i.e. post-Uruguay Round) and project the total gain in world income from liberalizing these two sectors to be about US\$ 48 billion. What about liberalization of specific sectors?

### C. TELECOMMUNICATIONS SERVICES

Table 8, taken from Verikios and Zhang (2001), shows the results of complete liberalization of the telecommunications sector for various countries and the world as a whole. The world is projected to gain by about US\$ 24 billion (a 0.1 percent rise in world real GNP). All regions in Asia are expected to gain, except Malaysia and Thailand. China and Indonesia are expected to experience the largest gains, with Korea and other higher income countries benefiting from relatively smaller gains. While the results further indicate that countries with higher initial barriers should

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<sup>18</sup> China itself is expected to gain from services liberalization by around US\$ 90 billion.

TABLE 8: SOURCES OF CHANGE IN REAL GNP OF COMPLETE LIBERALIZATION IN TELECOMMUNICATIONS SERVICES (US\$ MILLION)

Region	Allocative efficiency	Terms of trade	Net capital endowment	Product variety	Net FDI income	Row sum	Real GNP
Korea	36	-5	-13	1	16	35	0.01
Indonesia	1,152	-434	1,303	401	-1,151	1,258	0.70
Malaysia	17	-30	—	-5	-3	-22	-0.03
Thailand	37	-562	60	17	-55	-502	-0.35
China	5,575	-1,301	354	1,037	-343	5,321	0.81
World	20,600	-34	833	2,938	—	24,313	0.10

*Note:* The sum of the terms of trade effects on GNP do not sum exactly to zero due to numerical inaccuracy in solving the model.

*Source:* Verikios and Zhang (2001).

benefit the most through liberalization, the results for the middle-income countries such as Malaysia and Thailand are certainly surprising and warrant closer examination.

The FTAP model allows five sources of gains from liberalization to be distinguished: The first three effects are “income generating”, with the other two being “income redistributing”. As Verikios and Zhang (2001) note:

“For the world as a whole, only changes in allocative efficiency, net capital endowments and product variety contribute to the changes in real GNP. These three effects can be referred to as ‘income generating’ factors. The other effects do not change world total GNP, that is, what constitutes a gain for one region is a loss for other regions. They can therefore be referred to as ‘income redistributing’ factors. For the world as a whole, whether a policy change is beneficial or not depends on income generating factors rather than income redistribution factors. At the regional level, however, both types of contributing factors are important” (pp. 11–12).

The projected declines experienced by Malaysia and Thailand post liberalization result from adverse movements in the terms of trade and declines in net FDI incomes outweighing the allocative efficiency gains. However, in the case of large, highly protectionist countries such as China and Indonesia the allocative efficiency gains dominate. Korea benefits marginally from a combination of allocative efficiency benefits as well as positive net FDI income.

While the preceding discussion has been about the income of telecommunications liberalization on overall income (GNP), the outstanding question is how this increase in income is divided across the various sub sectors in the economy. Verikios and Zhang (2001) find that in all cases, and as expected, the telecommunications sector itself sees an expansion (save for Hong Kong), with the extent of expansion being larger the more protectionist the country in that sector pre liberalization. Beyond that, few generalizations can be made. Nonetheless, it is noteworthy that China and Indonesia are expected to benefit virtually across-the-board (the exceptions being “other services” in the case of China and Indonesia, and primary industries in China).

## D. FINANCIAL SERVICES

Table 9 reproduces the results of the complete liberalization of the financial sector (which includes finance/banking, insurance and business services) for various countries as well as the world as a whole. The world as a whole is projected to gain by about US\$ 23 billion (a 0.09 percent rise in world real GNP). As before, complete liberalization of financial services tends to benefit developing regions more than developed economies.

TABLE 9: SOURCES OF CHANGE IN REAL GNP OF COMPLETE LIBERALIZATION IN FINANCIAL SERVICES (US\$ MILLION)

Region	Allocative efficiency	Terms of trade	Net capital endowment	Product variety	Net FDI income	Row sum	Real GNP
Korea	796	-578	1,826	663	-1,229	1,468	0.36
Indonesia	753	-340	2,245	549	-1,943	1,250	0.70
Malaysia	262	-112	150	70	-144	226	0.27
Thailand	703	-266	2,311	453	-1,797	1,396	0.96
China	1,221	-1157	104	322	-106	384	0.06
World	6,463	-16	14,164	2,112	0	22,640	0.09

*Note:* The sum of the terms of trade effects on GNP do not sum exactly to zero due to numerical inaccuracy in solving the model.

*Source:* Verikios and Zhang (2001).

The sources of gains can be decomposed as in the case of the telecommunications sector. The largest gains are generated due to capital reallocation to the liberalizing countries as well as allocative efficiency gains. As before, there are significant gains due to the availability of greater productive variety but fairly large losses due to the FDI income effect. The terms of trade effect is also negative. Overall, Thailand and Indonesia benefit the most from liberalizing the sector. Somewhat surprisingly, China appears to benefit only marginally while Malaysia and Korea benefit moderately. The reason for China's rather moderate projected gain is due to a sharp adverse movement in the terms of trade effect which negates the allocative efficiency gains, while the gains due to changes in new capital stock are rather modest.

With regard to the sectoral distribution, as expected, the financial service sector itself is expected to gain. Recall that in the case of the liberalization of the telecommunications sector, obvious patterns of sectoral gains or losses do not emerge. Interestingly, in the case of liberalization of the financial service sector, virtually all other sectors are expected to be positively impacted for four of the five Asian countries (except China). The exceptions are the primary industries in Malaysia and Korea. Consistent with the modest gain by China, the positive benefits accruable to the financial, communications and construction service sectors as well as the secondary industries in China are matched by negative effects on the primary industries and other service sectors.

## V. CONCLUDING REMARKS

This article has attempted to assess the state of services liberalization and policy environment of the financial and telecommunications sectors in five Asian economies—China, Indonesia, Korea, Malaysia and Thailand. The assembled evidence confirms the theoretical expectation of a beneficial impact of an appropriately timed and sequenced liberalization of the telecommunications and financial service sectors on overall growth and welfare. The article then goes on to the empirical evidence on the effects of protection in services and the benefits of liberalization. While the results suggest that the greatest gains come from “complete liberalization”, the largest single benefit comes from reducing impediments to market access, particularly in the context of “establishment” rather than “operations”.

However, as with the case of liberalization of trade in goods, liberalizing trade in services could involve fairly painful short-term adjustment costs which need to be appropriately managed. In addition, services liberalization requires that the institutional and regulatory environment is fortified beforehand and during the process of liberalization. Liberalization in a weak or ineffective regulatory and supervisory environment can cause severe instability both in individual sectors and in the economy as a whole in view of the important linkages that services have to the rest of the economy. This danger was amply illustrated by the East Asian crisis of 1997–1998 that was partly caused by the ill-timed and ill-sequenced liberalization of the financial sector.

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