



THE AUSTRALIAN NATIONAL UNIVERSITY

PACIFIC ECONOMIC PAPERS

No. 340, 2003

Services Trade Liberalisation

Motoshige Itoh
and
Naoki Shimoi

AUSTRALIA—JAPAN RESEARCH CENTRE
ASIA PACIFIC SCHOOL OF ECONOMICS AND GOVERNMENT

PACIFIC ECONOMIC PAPER No. 340

2003

Services Trade Liberalisation

Motoshige Itoh
and
Naoki Shimoï

University of Tokyo

AUSTRALIA—JAPAN RESEARCH CENTRE
ASIA PACIFIC SCHOOL OF ECONOMICS AND GOVERNMENT

© Australia–Japan Research Centre 2003

This work is copyright. Apart from those uses which may be permitted under the *Copyright Act 1968* as amended, no part may be reproduced by any process without written permission.

Pacific Economic Papers are published under the direction of the Research Committee of the Australia–Japan Research Centre. Current members are:

Ms Jillian Broadbent Reserve Bank of Australia	Mr Jeremy Ellis Melbourne	Prof. Jocelyn Horne Macquarie University
Prof. Gordon de Brouwer The Australian National University	Mr Ted Evans Canberra	Prof. Andrew MacIntyre The Australian National University
Prof. Jenny Corbett The Australian National University	Mr Rob Ferguson Sydney	Prof. Warwick McKibbin The Australian National University
Dr Wendy Craik Earth Sanctuaries Ltd.	Dr Stephen Grenville The Australian National University	Prof. Alan Rix University of Queensland
Prof. Peter Drysdale The Australian National University	Prof. Stuart Harris The Australian National University	

Papers submitted for publication are subject to double-blind external review by two referees.

The Australia–Japan Research Centre is part of the Asia Pacific School of Economics and Government, The Australian National University, Canberra.

ISSN 0 728 8409

ISBN 0 86413 292 1

Australia–Japan Research Centre
Asia Pacific School of Economics and Government
The Australian National University
Canberra ACT 0200

Telephone: (61 2) 6125 3780

Facsimile: (61 2) 6125 0767

E-mail: ajrc@anu.edu.au

URL: <http://apseg.anu.edu.au>

CONTENTS

<i>Tables and figures</i>	iv
Introduction	1
Importance of trade in services	2
Human resources	18
Promotion of advanced technology and human resources	23
Developing institutional frameworks	27
Concluding remarks	28
<i>Notes</i>	30
<i>References</i>	30

TABLES

Table 1	Trade in services in different income brackets, 1990 and 2001	6
Table 2	Trade in goods in different income brackets, 1990 and 2001	6
Table 3	Services trade embodied in merchandise trade in Japan, 1990 and 1995	8
Table 4	Classification of trade in services in GATS	10
Table 5	Barriers to trade in services	17

FIGURES

Figure 1	Trade in services, 1985–2000	3
Figure 2	Trade in goods, 1985–2000.....	3
Figure 3	Share of service trade, 1985–2001	4
Figure 4	Breakdown of trade components, 1985–2001	5
Figure 5	Breakdown of ‘other services’ components, 1990–2000.....	5
Figure 6	Human resources and economic power in selected APEC economies, 1992–1997	19

SERVICES TRADE LIBERALISATION

This paper deals with the role of human development and technology in trade in services, the significance of trade in services, and the importance of investment in human resource development. It also outlines the requirements for promoting personnel training and the need for advanced technology.

The authors begin by describing what services are, before discussing how trade in services affects economic growth and the role of technology in the services sector. Next, they mention the importance of human capital in the services sector. They assume that the actions of regulatory authorities depend on the availability of human capital, so they refer to the relationship between trade in services and regulations. They also discuss the critical importance of investment for the improvement of human capital and the promotion of human development. The authors describe the impact of technology development in the service sector, and note especially that the improvement of information and communication technology (ICT) brings down costs and raises quality. They also note the role of the private sector in investing in ICT and networks, and the role of governments in creating investment-friendly environments. Finally, they comment on public policy before providing some concluding remarks.

Introduction

APEC's main goal is to achieve sustainable development in the Asia Pacific region; it plans to do so through the three pillars of liberalisation of trade and investment, facilitation of trade and investment, and economic and technical cooperation. The Osaka Action Agenda formulated in November 1995¹ outlines the three pillars, encourages concrete actions for the short and medium term in each field, and describes outlines or directions of action for the long term. It also aims to steadily develop liberalisation, facilitation and cooperation, taking current conditions into consideration, holding discussions, and attempting to make improvements based on periodic reviews.

APEC aims to achieve continued long-term sustainable development in the Asia Pacific region by autonomous stimulation of various economic activities within the region – for example, expansion of trade in goods and services, investment, personnel exchanges, networks of

transportation and information, and efficient financial and capital movements. It is probably impossible to achieve sustainable growth in the APEC region without the expansion of such activities. Such growth will require not only good policy development in individual countries but also coordinated activities by APEC member countries.

The liberalisation of trade and investment and the facilitation of trade and investment are important, but we do not discuss them in detail in this paper. Liberalisation deals with the elimination of tariffs, non-tariff barriers and other barriers in a wide range of areas, including services. Facilitation deals with the promotion of trade and investment by the adoption of unified standards and the removal of obstacles to trade and investment.

About economic and technical cooperation

Economic and technical cooperation activities support the liberalisation and facilitation of trade and investment. We define economic and technical cooperation as follows: cooperation that aims to enforce the economic policy framework in the Asia Pacific region to make possible an effective utilisation or the effective distribution of available resources, and that combines cooperative policy development and technical cooperation in terms of human resource development and institution building. Simple examples of economic and technical cooperation are the improvement of access to information, the promotion of personnel training, and the promotion of networks and partnerships.

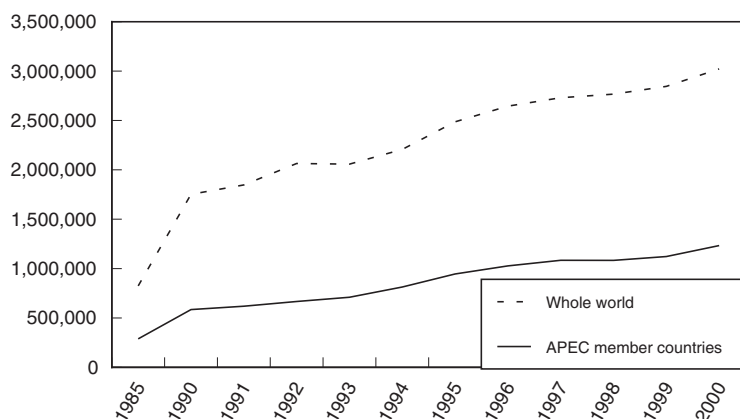
Cooperative policy development is achieved through existing networks such as the APEC Committee, through working groups in the Pacific Economic Cooperation Council (PECC), and through the APEC Study Centre. Technical cooperation requires strengthening financial sectors and promoting progressively closer adherence to principles based on the PECC competition principles that are endorsed by APEC leaders. This is expected to proceed with a focus on human resource development or institution building. In light of the diversity of APEC member countries, there is a growing need for economic and technical cooperation as a means to reduce disparities of intra-regional development and to remove obstacles to sustainable economic growth.

Importance of trade in services

One aspect of economic and technical cooperation activities is trade in services, which has become increasingly important in recent times. In this paper, we focus on the expansion of trade in

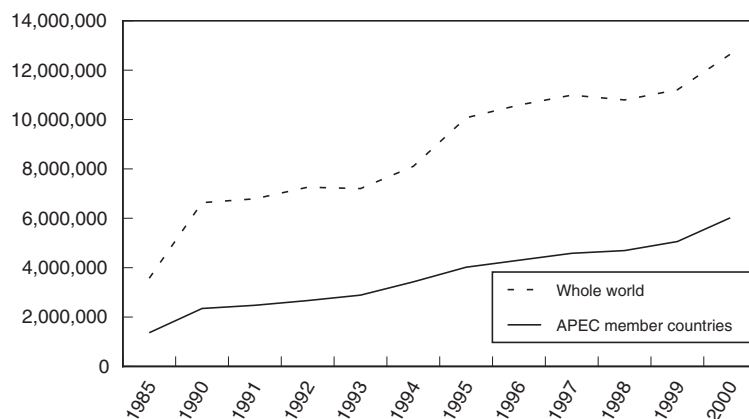
services in the Asia Pacific region. Figures 1 and 2 show the steady upward trend in trade in goods and services from 1990 to 2000. Figure 3 shows how APEC's share in world trade in services increased during the period. For the whole world, trade in services is about 20 per cent of total goods and services trade, and about 60 per cent of the labour force is now employed in the services sector.² An important feature of the sector is the degree of employment of female workers, especially in developed countries.

Figure 1 Trade in services, 1985–2000 (US\$ million)



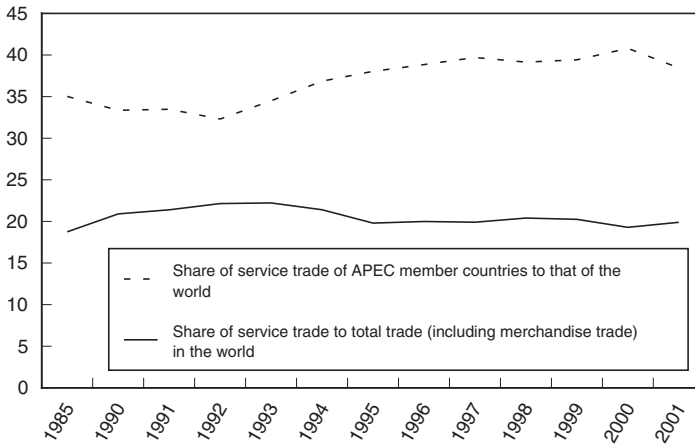
Source: IMF balance of payments figures.

Figure 2 Trade in goods, 1985–2000 (US\$ million)



Source: IMF balance of payments figures.

Figure 3 Share of service trade, 1985–2001 (per cent)



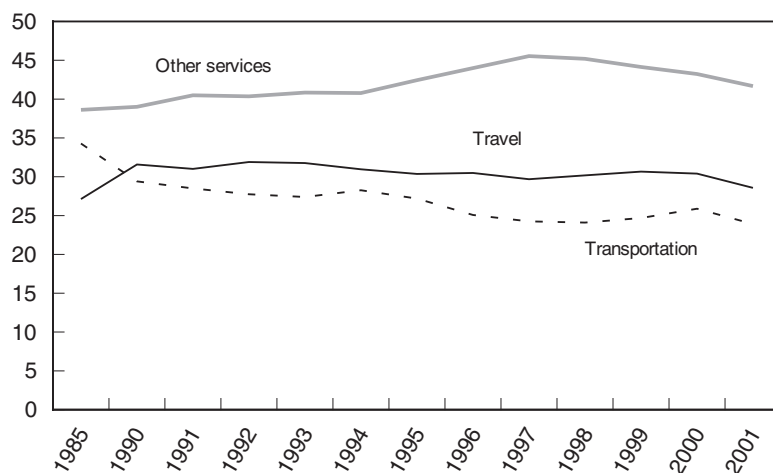
Notes: Data not available for Taiwan and Brunei; Hong Kong data are from 1998; 2001 data not available for Malaysia; Russian data are from 1994; Vietnam data are from 1996 to 2000.

Source: IMF balance of payments figures.

Figures 4 and 5 show more detailed information about the development of different parts of the services trade. Royalties and fees, insurance and financial services have been increasing as a proportion of total ‘other services’, but transportation and travel are both almost 30 per cent of the total.

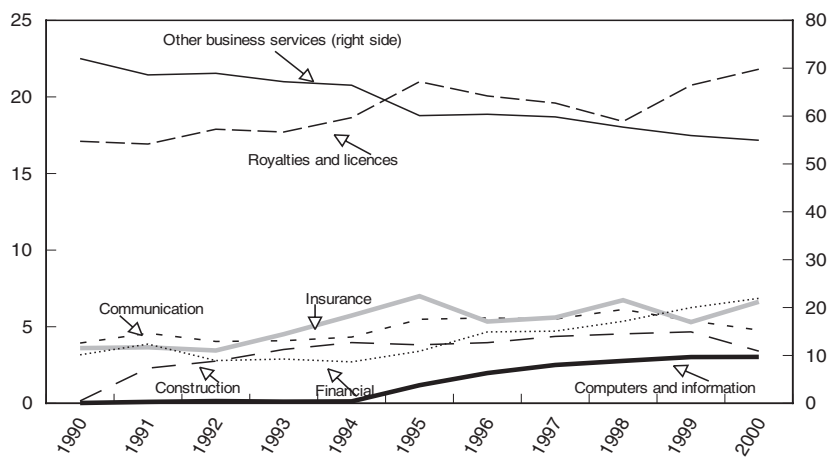
We used data from the World Development Report (World Bank, various years) to analyse the proportion of trade in services to total trade in different income brackets. Table 1 shows the results. The ratio is a little less than 20 per cent, consistent with the results shown in Figure 3, although the proportion of countries with medium incomes is somewhat low in Table 1. Table 2 shows the contribution of different sectors in different income brackets. The services sector is a considerable proportion of GDP at all income levels, and the proportion rises as income rises, reaching 70 per cent of GDP in countries characterised by high incomes – that is, advanced industrial countries.

Figure 4 Breakdown of trade components, 1985–2001 (per cent)



Source: IMF balance of payments figures.

Figure 5 Breakdown of ‘other services’ components, 1990–2000 (per cent)



Source: IMF balance of payments figures.

**Table 1 Trade in services in different income brackets, 1990 and 2001
(percentage of total trade)**

	1990	2001
Low income	17.0	18.6
Middle income	14.4	14.5
Lower middle income	13.1	15.0
Upper middle income	15.8	13.8
High income	18.6	19.8

Source: World Bank, World Development Indicators 2003.

**Table 2 Trade in goods in different income brackets, 1990 and 2001
(percentage of GDP)**

	GDP (%)		Agriculture (%)		Industry (%)		Manufacturing (%)		Services (%)	
	1990	2001	1990	2001	1990	2001	1990	2001	1990	2001
Low income	100	100	29	24	30	32	16	18	40	45
Middle income	100	100	14	10	39	36	24	23	47	54
Lower middle income	100	100	20	12	39	40	26	26	41	48
Upper middle income	100	100	8	7	39	33	23	20	53	60
High income	100	100	3	2	33	29	22	20	64	70

Source: World Bank, World Development Indicators 2003.

However, the statistics for service activities can be misleading. One reason is that banking, telecommunication and consulting services are all included in the service industry category, but they have very different characteristics. Another reason concerns the way in which the statistics deal with some manufactured products. Product design outside a company is included in the services category for the purposes of statistics, but this is not the case for a company that designs its own products.

A third problem is that the statistics for trade in services in current transactions are unreliable because most trade in services occurs as foreign direct investment (FDI), with services

being provided to firms' overseas branch offices. When calculating the balance of payments, the amount related to FDI is just a summation of the value of FDI and income from FDI, but the value of service activities must be considered in a comprehensive way, including the value of FDI. Urata and Kiyota (2003) discuss this point in their study of services trade embodied in merchandise trade. Their results are shown in Table 3, which indicates that services trade embodied in merchandise trade is large in relation to finance, insurance, real estate, research development and business services.

Services activity has been defined as 'a change in the conditions of a person, or of a good belonging to some economic unit, which is brought about as the result of the activity of some other economic unit, with the prior agreement of the former person or economic unit' (Hill 1977). Stern and Hoekman (1988) identified three characteristics of services: production and consumption generally take place simultaneously; services cannot be stored; and services are intangible. Mattoo et al. (2001) noted that for many services the distinguishing characteristic that production and consumption take place simultaneously means there is a need for proximity between consumers and producers. The General Agreement on Trade in Services (GATS) recognises four categories, or 'modes', of services trade (Table 4). However, it is difficult to obtain statistics on the four modes. As noted above, this is because most service activities are not included in official balance of payments figures. But GATS mode 3 is closely related to FDI, so trade in services is underestimated in this mode.

Reason for the expansion of trade in services

GATS principles have guided the expansion of trade in services in the Asia Pacific region and have provided the institutional basis for expanding trade in services across borders.

Globally, the volume of trade in services is increasing, as a result of the general trend toward a service economy in many countries, especially developed countries. Both supply factors and demand factors encourage the growth of a service economy. Supply factors make it possible to offer better services at lower cost; demand factors lead to an expansion of demand for consumption related services as a result of increases in income accompanied by economic development, and an expansion of demand for intermediate services as a result of increasing specialisation in production. Furthermore, better transportation and communication allow greater movement of consumers and information.

**Table 3 Services trade embodied in merchandise trade in Japan, 1990 and 1995
(US\$ million, current prices)**

	Disembodied services trade			Embodied services trade		
	Exports	Imports	Net exports	Exports	Imports	Net exports
(a) 1990						
Construction	0	0	0	3,253	2,581	672
Electric power, gas, steam, and hot water supply	142	20	122	12,082	11,207	875
Water supply and waste disposal	26	7	19	1,761	1,955	-195
Commerce	14,352	2,262	12,091	26,366	18,055	8,311
Finance and insurance	2,980	5,217	-2,238	13,293	13,813	-520
Finance	2,553	4,841	-2,288	11,880	11,762	118
Insurance	426	376	50	1,413	2,051	-638
Real estate	28	53	-25	6,240	5,174	1,066
Transport	26,926	17,087	9,839	17,079	17,838	-759
Communications and broadcasting	270	375	-105	4,211	3,182	1,029
Public administration	0	0	0	208	184	24
Education and research	71	123	-52	18,306	8,619	9,688
Education	0	1	-1	300	167	133
Research institutes (including R&D)	71	122	-51	810	750	60
R&D (intra-enterprise)	0	0	0	17,196	7,701	9,494
Medical services, health, and social security	1	7	-5	2	1	0
Other public services	275	194	81	660	665	-5
Business services	3,245	7,228	-3,983	31,120	23,127	7,993
Advertising agencies	469	2,002	-1,533	4,149	2,760	1,389
Inquiry and information services	663	1,511	-848	4,695	3,159	1,536
Personal services	2,776	17,724	-14,948	981	610	371
Amusement and recreational services	236	1,840	-1,604	693	404	289
Services total	51,093	50,296	796	135,562	107,012	28,550

Table 3 contd.

(b) 1995	Disembodied services trade			Embodied services trade		
	Exports	Imports	Net exports	Exports	Imports	Net exports
Construction	0	0	0	5,547	4,425	1,122
Electric power, gas, steam, and hot water supply	263	13	250	19,073	16,746	2,327
Water supply and waste disposal	43	7	36	2,541	2,347	193
Commerce	32,953	1,663	31,290	42,637	34,072	8,565
Finance and insurance	6,135	10,915	-4,780	22,565	22,149	416
Finance	5,251	8,809	-3,559	20,759	19,808	951
Insurance	885	2,106	-1,221	1,806	2,341	-535
Real estate	55	48	7	7,906	7,132	774
Transport	32,302	24,034	8,267	25,130	26,313	-1,183
Communications and broadcasting	7,966	3,426	4,539	8,434	7,951	483
Public administration	0	0	0		578	511
Education and research institutes	229	349	-119	29,088	14,467	14,621
Education	0	2	-1	437	289	148
Research institutes (including R&D)	229	347	-118	1,690	1,138	552
R&D (intra-enterprise)	0	0	0	26,961	13,040	13,921
Medical services, health, and social security	1	8	-7	2	2	0
Other public services	501	418	83	961	878	83
Business services	8,602	16,583	-7,981	43,411	35,765	7,646
Advertising agencies	1,088	3,584	-2,496	6,531	4,933	1,598
Inquiry and information services	1,483	3,051	-1,568	3,765	2,718	1,047
Personal services	4,671	29,898	-25,227	1,133	871	262
Amusement and recreational services	284	2,327	-2,044	735	561	175
Services total	93,720	87,362	6,358	209,006	173,629	35,377

Source: Urata and Kiyota (2003), pp. 414–415.

Table 4 Classification of trade in services in GATS

Mode	Type of trade	Content
1	Cross-border	Trade takes place from the territory of one member into that of another. Only the service itself crosses the border, without the movement of persons. The service supplier does not establish any presence in the territory of the member where the service is consumed.
2	Consumption abroad	Services consumed by nationals of a member country in the territory of another member where the service is supplied.
3	Commercial presence	The service supplier crosses the border to have a 'commercial presence' abroad through which the service is provided.
4	Presence of natural persons	Applies to natural persons only, when they stay temporarily in the market, for the purpose of supplying services.

Source: GATS (1995), p. 24.

Economic development also tends to lead to increased demand in the trans-national services industry, which is expected to become even larger in the future, accompanied by increasing development in information technology and transportation technology. Mattoo et al. (2001) noted that liberalisation of trade in services includes factor mobility and that a characteristic of trade in services is that its liberalisation leads to scale effects. They suggested that productivity would improve through the dissemination and diffusion of knowledge in the telecommunications sector and through the reduction of transaction costs in accounting or legal services for business services. Therefore, they concluded, trade in services is expected to increase in the future through expansion from the supply side.

Influence of trade in services on economic growth

How does the growth of the services sector affect the efficiency of production? Services can be classified as services for final consumption (for example, passenger transportation, medical services, education and communication)³ or producer services that are used as intermediate inputs for production activities (for example, financial services, consulting services and other

services that strongly influence the production of goods or the efficiency of production). They are knowledge intensive and have large fixed costs, so there are likely to be economies of scale.

Final consumption services can be transacted across borders through trade, so the patterns of specialisation and trade of services are just like those of trade in goods and can similarly achieve efficiency of resource allocation. But international transactions in producer services have a different effect on the efficiency of production. The share of producer services in trade in services is large, so it is important to consider the effect of producer services on production.

The three characteristics – the possibility of scale economies, a tendency to product differentiation, and complementarity of services – means that market expansion and increased producer services are likely to increase efficiency in providing goods.

Jones and Kierzkowski (1990) and Markusen (1989) have shown theoretically that efficiency will enhance the production of goods by trading producer services. Jones and Kierzkowski showed that, if trade in producer services occurs internationally, the production process will become fragmented and, as a consequence, the efficiency of production will increase because of economies of scale. Markusen showed that trade in producer services tends to enhance the efficiency of production because of explicit complementarities between the three characteristics of producer services described above. Other studies have shown that increased trade increases consumer choice and welfare. For example, Krugman (1990) used a monopolistic competition model including the assumption of scale economy and product differentiation. Markusen applied the argument to producer services and proved that producer services improve the efficiency of production of goods. That is, if trading product differentiated services become available, the prices of producer services fall not only because of economies of scale but also because of specialisation through the existence of product differentiation. In addition, both old and new producer services become more productive because of complementarities. In other words, the Markusen model indicates that producer services have three channels by which they can enhance the efficiency of goods production.

We can avoid waste and reduce costs by importing producer services such as management consultancies from abroad. With fragmentation of the production process, we can also start to produce new goods by opening trade in producer services. For example, the transfer of technology services and financial capital transfer in the form of direct investment may lead to new industry production in countries that formerly lacked particular technology or management services.

Thus, liberalisation that encourages the transfer of producer services can increase the efficiency of production and also help to start up activities in new goods or services.

We have focused our discussion on producer services, but we can extend the principle to final consumption services such as transportation, telecommunications or medical services. In these services too, technological progress leads to reduced costs and greater efficiency. Liberalisation of telecommunication network services also leads to increased productivity through the expansion of services such as financial services and rental services that use communication services. Moreover, trade in goods will increase because of increased demand for computer and other telecommunications equipment. Liberalisation in the transportation sector leads to similar results, especially given the remarkable growth of air transportation services. The effects will apply to both trade in goods (freight transportation) and trade in services (travel).

In other words, trade in services has close connections with traditional trade and investment, and expansion of trade in services also promotes further trade and investment in goods. Moreover, promotion of trade in services increases the efficiency of production and productivity. Therefore, we can say that the expansion of trade in services leads to economic growth.

Existing research on the effect of trade in services on economic growth

APEC (2000) suggested that trade in services would increase dramatically with the diffusion of information and communication technology (ICT), especially the internet, because ICT has the characteristics of a public good, with the potential for increasing returns to scale. APEC described four policy dimensions for analysing economic and technical cooperation and proposed several indicators of policy success:

- innovation (indicators such as business expenditure on R&D)
- human resource development (indicators such as secondary enrolments)
- ICT infrastructure (indicators such as internet users per 1,000 people)
- business environment (indicators such as competition policy).

APEC showed that it is possible to assess the sustainability of economic growth by examining these indicators.

Deardorff (2001) showed that liberalising trade in services stimulates not only service activities but also trade in goods. His argument was as follows: merchandise trade requires business services such as transportation, insurance and finance as inputs; promoting international trade in services reduces costs and barriers; therefore trade in goods increases and gains from trade are larger than would be expected.

Mattoo et al. (2001) used empirical analysis in financial and telecommunications services to show that more openness in the telecommunications or financial sector raises average output growth. They argued that when many foreign companies enter a country as a result of liberalisation, there is competition leading to economies of scale. Even if there were no economies of scale, they argue, there would be positive effects because the inflow of foreign factors of production would induce technology transfer.

Roller and Waverman (2001) analysed the link between economic growth and telecommunication services in 21 Organisation for Economic Co-operation and Development (OECD) countries over 20 years. They showed a positive causal link between telecommunication infrastructure and economic growth when there is a critical mass of telecommunication infrastructure.

Primo Braga (1997) used empirical analysis to assess the results of liberalisation of the communications industry. He found that liberalisation would improve local firms' access to efficient telecommunication services providers, increase their competitiveness and thus increase their ability to participate in international trade in information-intensive products and services.

In an interesting empirical study on technology diffusion, Coe et al. (1999) examined knowledge spill-overs and externalities to analyse the relationship between trade in goods and total factor productivity growth.

Hoekman and Primo Braga (1997) also emphasised the merit of services liberalisation, and pointed out that, through trade in services, service activities may generate network externalities or may be associated with agglomeration and other scale effects. For example, in the product distribution sector, multi-modal transport, warehousing and marketing are associated with economies of scale. Agglomeration externalities may also be important for tradable services that are not closely linked to specific manufacturing activities – for example, financial intermediation or consulting services. Network externalities are particularly important for telecommunications and information services.

The studies discussed above indicate that the liberalisation of service sectors, especially telecommunications, increases efficiency in production, raises productivity, and stimulates economic growth through economies of scale, network externalities and technology transfer. We can also conclude that economic and technical cooperation is necessary in the field of trade in services. In particular, it is essential in tackling related fields such as improved access to information, the promotion of personnel training and the promotion of networks and partnerships.

Trade in services also requires highly skilled labour. Bayoumi et al. (1999) used a world econometric model to examine the growth-promoting role of R&D, international R&D spill-overs and trade. They showed that a country can raise its total factor productivity by investing in R&D and that trade expansion can increase access to foreign technology, and thereby contribute to growth in developing countries. They also showed that the movement of workers and consumers is encouraged by reducing passenger transportation costs, further increasing trade in services.

Why do countries continue to erect trade barriers?

Given all these benefits from liberalising producer services, why do countries continue to erect trade barriers? One reason is that governments fear the removal of regulation in case it allows producers to exercise monopoly power – for example, in electrical power services, communication services and traffic services. Another reason is that governments may be concerned about threats to national security if they accept foreign capital in fundamental services areas. However, it is possible to consider these problems in a different way if we assume that producer services are knowledge intensive and subject to economies of scale. Then we can see that the use of consultants by domestic companies or host countries is beneficial to the home country in the long run because the country does not have to depend on foreign funding or foreign consultant services. In other words, the arguments used for the protection of infant industries involved in trade in goods may also be applied to trade in services.

Trading produces static gains of efficiency of resource allocation at a specific point in time, but there are also other gains. When imported goods flow into the domestic market, competition with domestic companies boosts trade and improves the efficiency of production because it raises the efficiency of dynamic resource allocation. Even if trade in services is accompanied by the establishment of subsidiaries of foreign companies, we can expect to achieve improvements in the production efficiency of domestic companies as a result of the increased competition and to reap the benefits of more dynamic resource allocation. Governments recognise such resource

allocation efficiency effects, but most still retain regulatory measures or hesitate to liberalise trade.

Finally, we want to stress the importance of institutions for liberalisation. Trade in services depends greatly on the institutions in each country and the basic GATS agreement is also related to institutional style. Accordingly, we expect the institutions of each country to favour the expansion of trade in services and to adhere strictly to GATS principles. There is also a need for greater consistency among institutions in different countries, with greater understanding and deepened trust. Finally, there is a need to provide a place for dialogue about the institutions and to realise that collaboration is very important both in the encouragement of human resources development and in personnel training.

Relationship between trade in services and regulations

The policy instruments that affect international trade in services are similar to those used in the context of goods, and consist of measures such as subsidies, tariffs, taxes, quotas and technical standards. In the case of services, regulation can be an important indirect barrier to trade, and regulatory reform is often a necessary complement to trade liberalisation. The application of regulations, usually by the government, will depend on the degree of involvement of human capital. For this reason, we provide more detail here about the relationship between trade in services and regulation.

Several examples can be used to illustrate this relationship. Relaxation of regulation of the inflow of foreign construction workers to a country will encourage the import of construction labour services. Trade in services will often expand if regulation of goods is tightened. For example, if tariffs on imported cars were increased, foreign car producers would try to capture the market in an importing country by direct investment or technical cooperation rather than through export.

The World Bank (1997) has described some consequences of regulation in Chile and the Philippines. Chile began regulation reform early in the 1980s. Private investment in the telecommunications industry raised the quality of service and competition, resulting in price reductions. In the Philippines, the telecommunications industry had been owned by the private sector for many years, but regulation was dysfunctional and underinvestment in the industry continued until the government recently introduced reforms. The result of the poor regulation and underinvestment has been a very high price of services, with people and companies bearing

high telecommunications costs. The suitability of the regulatory framework determines whether the private sector provides good infrastructure and services.

If the type of trade in services needs proximity of production and consumption, the problem inevitably concerns not only border policy but also domestic policy. This is different from the situation with trade in goods, in which production and consumption can be separated and therefore remarkable liberalisation can be achieved through abolition of the border policy alone. However, many types of trade in services are subject to government regulation, with production and consumption processes located in a single organisation; negotiations on the liberalisation of trade in services has therefore been often more challenging than those on trade in goods.

The importance of domestic regulation as a barrier to trade in services

In trade in goods, there are gains from the division of labour based on comparative advantage. If this is also true for trade in services, reducing or abolishing barriers to the expansion of trade in services will be welfare enhancing. However, liberalisation is accompanied by regulatory costs when companies and labour relocate and face competition from increases in imports. Moreover, the concept of comparative advantage has various theoretical restrictions, so trade liberalisation is not unconditionally beneficial.

Sampson and Snape (1985) and Stern and Hoekman (1988) classified four modes of barriers to services trade as shown in Table 5. A common feature is that domestic regulation in each service field is one of the factors that prevents international transactions. Domestic regulation is based not only on economic and technical factors but also on political, cultural and national security factors. For example, in mode 1 of Table 5, concerning international data flows, parent companies may be prohibited from sending specific information to overseas databases because of concerns about national security and privacy protection. Such regulation can be seen in some developing countries.

Regulations take various forms, including those which regulate international transactions directly and others which regulate foreign transactions indirectly through regulation of domestic transactions. Regulation of international data flows is direct regulation on international transactions. Regulation against the formation of public monopolies applies not only to domestic companies but also to foreign companies. In other words, regulation of internal affairs transactions serves as an indirect barrier to international transactions.

Unlike barriers such as tariffs or import quotas, regulatory barriers cannot be quantified in specific terms. In the process of abolishing trade barriers, the focus has moved from tariff

Table 5 Barriers to trade in services

Mode	Example of transaction	Example of barrier	Main issues
1 (Cross-border)	Information service by data communications (separated services transaction). Supply of technology and management know-how by communication (separated producer services transaction).	Regulation of international data flow; regulation of the specific export of technology.	National security, privacy, public monopoly.
2 (Consumption abroad)	Tourist business services.	Foreign currency export regulations; sightseeing visas; study abroad visas.	Foreign currency assignment and immigration management.
3 (Commercial presence)	Finance, construction, and information services by company establishment (services by capital and labour). Law, accounting, consultant services, labour services (services by labour only)	Permission of business, controls over foreign exchange and business operations entry; tendering system for public works; business qualifications in a foreign country; working visas.	Public monopoly, national security, standards, authorisation of license, and immigration controls
4 (Presence of natural persons)	Medical services dealt in the third country.	Mode 1 and 2 barriers.	Licence and immigration management.

Source: Sampson and Snape (1985); Stern and Hoekman (1988).

barriers to non-tariff barriers such as institutional regulation. Here, we have examined further the linkage between trade in services and regulation. Findlay and Warren (2000) identified seven ways in which to measure impediments to trade in services: define impediments; identify specific impediments; make theoretical links explicit; determine relevant price wedges; identify appropriate benchmark markets; decompose wedges; and incorporate price-impact data into a general equilibrium model. They use this practical approach to measure impediments to services such as telecommunications, banking and education.

Cost of service regulation of public utilities

In principle, restrictions on trade in services can be expected to have equivalent welfare costs as they too drive a wedge between domestic and foreign prices. Many empirical sectoral studies support this contention. Services are invested in production as factors of production, so price increases as a result of inefficient services have the same effect that inefficient production of goods would have – additional cost increases. Deardorff (2001) showed that gains are obtained by eliminating obstacles to trade in services and encouraging trade in services. Mattoo et al. (2001) concluded that liberalisation of trade in services (transportation, insurance and finance) encourages not only trade in services itself but also trade in goods. Mattoo et al. (2001) estimated that countries with fully open telecom and financial services sectors grow up to 1.5 percentage points faster than other countries.

Findlay and Kim (2001) claim that regulation is reasonable to avoid the risk of market failure through information asymmetry, externalities or differences in market power in the service sectors. However, regulation must pursue efficiency. Countries should impose the minimum possible amount of regulation.

Service areas such as information and communication services have public good aspects and may require some regulation because of national security considerations. However, the merits of liberalising trade in services are great. The actions of regulatory bodies are influenced by the availability of good human resources, so promoting human resource development is important. We now turn to that aspect of liberalisation

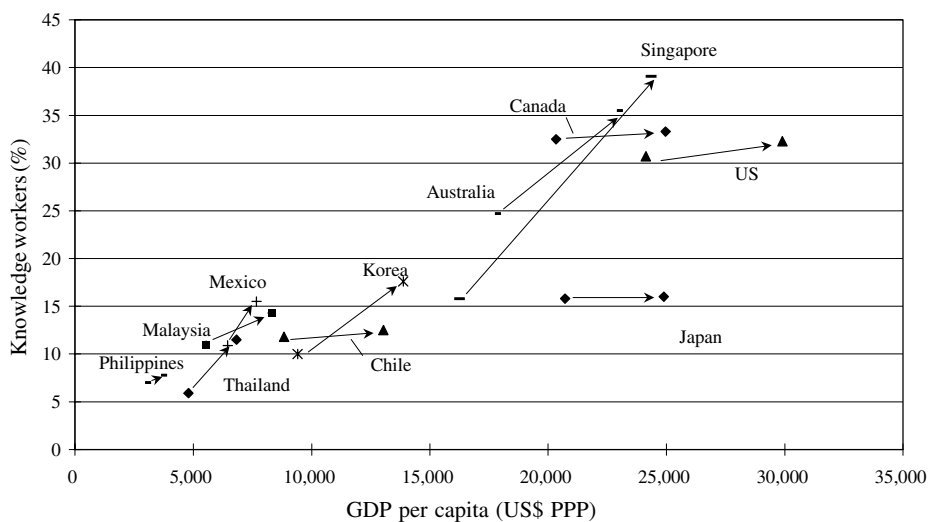
Human resources

Human resources and personnel training are necessary for the expansion of trade in services. Economic and technical cooperation programs for improving the quality of human resources include better education programs, greater opportunities for education, better information transmission and so on.

Why are human resources necessary?

We begin by discussing the correlation between human resources and economic power. Figure 6 shows data for some APEC countries.⁴ For each country, the base of the arrow indicates data

Figure 6 Human resources and economic power in selected APEC economies, 1992–97



Note: PPP = purchasing power parity.

Source: IMF (2003); APEC (2000).

for 1992; the head of the arrow indicates data for 1997. 'Knowledge workers' are defined as people whose work lies primarily in the manipulation of symbols, with a strong requirement for specialised knowledge. Figure 6 was created by adding together data about people whose occupation was in the following International Labour Organization (ILO) categories: managers and senior government officials, professional workers, or associate professionals (APEC 2000). The figure shows a generally positive correlation between a country's GDP and the proportion of knowledge workers it has in its work force. It is likely that improved human resources might lead to higher economic growth.

Technical innovation in industry will not occur unless people in manufacturing, management and research can adapt to industry needs and changing economic conditions. Furthermore, there are big differences in management and administrative ability among APEC member countries; liberalisation might be more effective if we used economic and technical cooperation to compensate for these differences. Thus, the need for economic and technical cooperation in trade in services can also be considered from the viewpoint of the effectiveness of liberalisation.

Economic and technical cooperation can also lead to economies of scale. It is expensive for individual developing economies, especially small ones, to set up their own human resource development facilities. However, facilities that catered for trainees from all or some Asia Pacific countries could realise some significant economies of scale and perhaps also economies of scope.

There is a need for R&D investment and new investment reflecting R&D investment. Such investments are connected with an expansion and conjunction of various international networks, especially information networks. The development of communication technology leads to a decrease in the cost of equipment and facilities, and a relative increase in the cost of software. Services that convey information have characteristics analogous to services that convey goods, but in the abstraction, fabrication and diagnosis of information there is a strong link between software and hardware. Economies of scope and scale will be very important. Moreover, since the quality of services depends strongly on skills, knowledge, creativity and a high processing capability, it is necessary to enhance human capital to improve these factors.

Economic and technical cooperation in human resources such as personnel training can serve to create community spirit and can enhance mutual trust within APEC economies. For a system to operate sustainably and efficiently, it needs to have a high degree of confidence in the ability and integrity of all institutions in the region. Such confidence requires a high degree of mutual respect and mutual trust. Establishing and sustaining such trust needs both human development and technical cooperation. Mutual confidence in the capacity to use such regulatory powers depends on having well-trained staff.

Development of human resources

First, we need to clarify the areas we need to target in order to achieve expansion of trade in services through economic and technical cooperation and staff training. We point to routine administration, law, accounting and administration of communication networks related to financial services. There may be others.

Exploitation of existing support programs

APEC is running short of both financial resources and human resources. Accordingly, we suggest beginning by applying bilateral support programs for personnel training to APEC member countries. We should exchange information obtained from developed countries and discuss what

kind of staff training support we can offer, taking into account the need for consistency in support programs for all member countries. One possible method is to divide specific fields into several classes, with each country taking charge in one field.

An effective program is likely to require different levels of training – for example training high-level staff, training staff to take charge of business on the spot and recruiting young staff for future services. Some educational assistance programs focus on the provision of supervisors or the acceptance of interns. But we could use internet networks more aggressively, and this would help circumvent budget restrictions. For example, in Asia the World Bank is trying to establish a program to support education through the internet. Such techniques are also available for staff training programs in the Asia Pacific region.

If we are to execute such programs, it is crucial that we invest in the development of human resources. Finance, insurance, advertising, consulting and intellectual property right services need specialised, professional knowledge and skills. They are therefore considered to be human capital intensive or technology intensive, and their development depends heavily on continuing investment on human capital. Such investment includes continuing training and updating of skills and the development of a learning organisation. The government and private sectors must both play a role since each has its own means to invest in the development of human resources. Both the public and private sectors can develop a learning organisation.

In the 1980s, the Asian Development Bank (ADB) provided increasing financial support for the development of human resources. Its assistance included support for the reinforcement of personnel training, the organisation of implementation agencies, and the development of mechanisms to improve management and control. In the 1990s, it focused on support for reforms such as privatisation and financial planning, including improvements in management efficiency and implementation.⁵ The privatisation of the transportation and communication sectors is common in Asia. In future, the ADB will focus on creating an environment that the private sector can enter easily and on ‘pump-priming’ to stimulate private investment.

Training in the telecommunication sector

The efficient and effective management in the telecommunications sector relies on high quality, highly skilled human resources. Government policy formulation and government supervision can be improved by the development of human resources and training programs. In the telecommunication sector, government regulation is necessary to maintain efficient management,

planning and standardisation in the technical environment, in order to provide appropriate services to customers. There is a need for improvements and reforms in administrative courts dealing with regulation; they should be independent of government, including government telecommunication supervisory agencies. And of course it is essential that the entire telecommunication sector be developed in a way that gives each organisation the ability to operate effectively.

Importance of education

Policymakers in developing countries are realising the importance of education in helping people to realise their potential,⁶ in developing the human resources needed for sustainable development and in promoting systems and organisations. The development of human resources has a direct effect on the performance of service sectors. Conventionally, education has been considered as investment in human capital that is necessary to improve the quality of the labour force. It has also been the basis of human resources policies for economic and social development. Better education expands job opportunities, increases people's productivity, makes possible the progression of earnings, and can promote the formation of systems and organisations to sustain overall development through personnel training. The ADB ranks 'human development', including the development of education, among the highest priorities for a development strategy (ADB 1995a). Here, we focus on how the introduction of market mechanisms affects education development and on the activities of women.

The ADB carried out a study on private schools in Indonesia in July 1995 (ADB 1995b). It focused on a private lower secondary education project. In recent years, a rise in demand for education in Indonesia has led the government to expand public schools and remove fees for attending them. As a result, private schools have become less competitive, and there has recently been a decline in the number of such schools and the number of students in them. There was a need nevertheless to expand education and raise the quality of both public and private schools. The project financing intended for private schools became the justification for the study. Generally, privatisation policies have affected the education sector as well as other sectors. In the future there is likely to be an increasing trend towards privatising education and introducing market mechanisms in the sector.

In recent years, interest in the part played by women in development has grown; providing support for an educational project intended for women is seen as important. As measured by

the gross rate of school enrolment, women's education has progressed less rapidly than that of men (UNESCO 1996). This is particularly the case for countries in South Asia. One reason for the disparity is that women are regarded as an important labour force in the home, so people who cannot easily afford education for their children tend to give priority to boys rather than girls. The slow pace of women's education has impacts in various areas – for example, population growth.

Promotion of advanced technology and human resources

ICT is one of the most important factors in establishing service transactions between countries. In the terminology of the classification of trade in services, ICT is classified as a separated service transaction or a separated factor of production service transaction. The separated services are produced in export countries just like goods and are consumed in import countries through international transactions. Typical examples are insurance and financial services, which require communication services.

Separated factor of production service transactions need proximity of producers and consumers. Other service transactions do not require the movement of either consumers or suppliers. Examples of these separated factors of production service transactions are management know-how or product design, which can be traded by means of communication. The decreasing cost of telecommunication and information services, accompanied by rapid technological progress, has reduced the price of these service transactions. Moreover, the development of new telecommunication technologies such as computers, digital communication and fibre-optic technology has made it possible to develop new services such as medical information services, aviation passenger information services and hotel reservation information services. There has also been a rapid expansion of business services such as information, investigation and data processing services.

In advanced countries, the liberalisation of trade in services tends to occur through the introduction of competition by deregulation and through improvements in efficiency. Exceptions are national security and public monopoly arrangements in public service sectors. Information and communication services, financial services, airfreight services and professional services are typical of sectors affected by deregulation.

There are some common features of information and communication services and financial services. Rapid technological innovations in the ICT sector continually generate new

services, reduce the price of services and create new business opportunities. Furthermore, enterprises that intend to broaden their commercial opportunities seek non-discriminatory national treatment when they establish a presence in local countries.

What is the best way to support technical assistance in the Asia Pacific region? We think it is necessary to form regional networks of specialists in crucial areas such as information technology and biotechnology. We also think that developing countries should use networks to promote attendance at international congresses and research interaction, should encourage the training of young researchers, and should arrange visits by leading experts. In order to concentrate efforts in these areas, cooperation should be restricted to several significant areas, with priority given to constructing networks of experts in each area. We should begin by discussing what kind of cooperation to start with.

The expansion of trade in services promotes the mobilisation of factors of production. Many service sectors react sensitively to technological development. The nature of services has changed with the rapid development of ICT and other advanced technologies. In particular, previously non-tradable services can now be traded, through the internet, for example. And there are lower service production costs and better service quality. As a result of these benefits, trade in services has increased, although services have been considered as domestic goods in the sense of the simultaneity of production and consumption. With severe competition and technological progress, there is an increased demand for services, and an increased supply of services; by providing higher quality services at lower prices, trade in services expands rapidly through these interactions.

Influence of technology on trade in services

Hoekman and Primo Braga (1997) describe rapid technological change in the telecommunications industry and suggest that it has increased the tradability of services because it is easier to divide the production and consumption of information-intensive services. Examples of these service activities are research and development, software development, data entry, inventory management, quality control, accounting, personnel services, secretarial services, marketing, advertising, distribution and legal services.

Primo Braga (1996) notes that information technology affects the tradability of services not only by making long-distance transactions more feasible but also by permitting the introduction of new services. Examples are financial derivatives, computer reservation systems for airlines and telemedicine. Moreover, progress in information technology is promoting

qualitative changes in the provision of existing services such as distance education. And, as communication links improve, there are more incentives for specialisation and outsourcing of service activities. In this context, services lie at the very core of the internationalisation of economic activities, by providing connections and by allowing separate production processes to be coordinated.

Sidorenko and Findlay (2001) identified two effects of ICT on economic growth. One concerns the speed with which combinations of new ideas can be examined and tested; the other concerns network effects or network externalities. Sidorenko and Findlay also note that rapid improvements in connection speeds and the availability of cheaper telecommunications services have increased the international flow of information and accelerated the diffusion of knowledge.⁷ However, some authors are sceptical about the effects of ICT on economic growth. Jorgenson and Stiroh (2000) argue that there are few possibilities for spill-over effects on ICT; rather, they say, information technology has affected access costs or equipment costs in world markets. Gordon (2000) suggested that the internet was not a great innovation compared with previous inventions.

Here, we assume that ICT does have an effect on economic growth and turn to the idea of a 'digital divide'. Does this exist and, if it does, what will happen in the future? Choi (2000) analysed this question for APEC member countries. He examined two types of information infrastructure: fixed telecommunication networks and mobile telecommunication networks. He found a positive correlation between teledensity (the development of information infrastructure) and economic growth; he found that this was problematic in newly affiliated countries or countries with large populations, such as China; and he found that the disparities between mobile networks in APEC countries is large but declining. He concluded that the information gap between APEC member countries would decrease in the future. His analysis is based on the assumption of an S-shaped network penetration curve, but his conclusions are highly suggestive.

Telecommunications may not play a central role in the production process or consumption activity, but they are essential in such areas as internet businesses, financial business, banking services, transportation and the travel industry. We summarise the economic effects of ICT on productivity as follows.⁸ First, the development of telecommunications reduces transaction costs, permits the expansion of communications networks and encourages cooperation between companies and individuals. Second, it helps to raise the skills of workers and can improve the quality of production factors such as capital and labour.

Against this backdrop, we now turn to an analysis of investment in infrastructure and the role of governments. We conclude that investment in infrastructure and human capital is important because they promote technological development.

Importance of investment in infrastructure and human capital

The World Bank (1994) showed that public investment in infrastructure promotes private sector activities in both developing and developed countries. In a study of 85 districts in 13 states in India, it showed that low transportation costs make it easier for farmers to carry their products to markets, allowing agricultural production to be expanded considerably. In a similar way, the activities of service sectors might be promoted through the building of high quality infrastructure. Moreover, telecommunication infrastructure is important in the improvement of technical capability and technology development.

Investment in human capital promotes technological development. Education is critical for the development of human capital. Campaigns against illiteracy bring large positive externalities to societies. One of the most important factors for the economic success of East Asia is its well-developed system of basic education. It is important to strengthen the support systems for basic education, especially in developing countries. It is also important to support young researchers and students. Individual countries may have programs for international students and researchers, but we should discuss how APEC member countries could cooperate and organise or unify diverse programs in the region.

Role of the government sector in technology

In building service sector infrastructure, the government plays a crucial role in setting the framework of policy and regulation. Governments can also play a useful role in direct investment in infrastructure, because they can take a longer-term view than can the private sector. The ADB provides the following strategy to assist governments to deal with developments in the communications sector (ADB 1993).

- (a) eliminate bottlenecks in the communications sector that prevent economic development, and support the expansion of modern communication networks, including those for less developed areas

- (b) improve the efficiency of communication networks, customer service levels, operational efficiency, and the maintenance of communication equipment
- (c) privatise communication sectors gradually (initially separating communications and post services, then attaining public industrialisation of the telecommunication sector, and finally introducing competition principles restrictively)
- (d) introduce competition principles by reinforcing policy, systems and organisation, leading to improved efficiency and better productivity
- (e) reinforce the operation, financial affairs and management of government-linked companies and seek their independence
- (f) eliminate distortions in costs and charges
- (g) diversify investment in the communication sector, including private sector investment
- (h) reinforce plans, systems and human resources in the communication sector.

Sidorenko and Findlay (2001) identified three areas in which there is a relationship between ICT and growth: the generation of network externalities; the development of human capital in the ICT area; and changes in trade policy, especially access to world markets for ICT products. They also noted the significance of government policy, arguing that ICT investment is likely to be small if left to the market because it has the nature of a 'public good' so there are increasing returns to the production process.

Developing institutional frameworks

A country's ability to develop trade in services is greatly influenced by its institutional frameworks. Streamlined systems are needed if trade in services is to expand smoothly across borders. To achieve economic and technical cooperation, APEC member countries must (1) establish domestic regulations and institutions; (2) provide information to both domestic and international firms, in a transparent environment; and (3) make domestic regulations more consistent by creating appropriate frameworks and standardising.⁹ Developed economies are in the process of carrying out the second and third steps, but most developing economies are still at the first or second stage. It is important to abolish the differences between various systems in order to increase business efficiency and proceed with unification.

One problem for economic and technical cooperation is its small scale, which tends to mean that it resists expansion. APEC has neither the financial resources nor the expertise to expand, and it must contend with these problems as soon as possible. It can deal with the problem of

financial resources by interacting closely with existing development agencies such as the ADB; it can deal with the problem of expertise by encouraging the participation of private citizens with experience in staff training, industrial technical cooperation, infrastructure maintenance and so on.

Government policies

Jones and Kierzkowski (1990) and Markusen (1989) showed that the efficiency of the production of goods occurs more efficiently through transactions in producer services; this has interesting implications for the development of a policy on trade in services.

First, even if some industries do not produce any goods in some countries because they do not have a comparative advantage before trade in services begins, industrialisation is very likely to make progress once production in goods begins. Therefore, in order to facilitate industrialisation, governments should formulate policies that expand trade in services.

Second, restrictions on trade affect not only the producers of goods and services but also consumers. This is because of economies of scale, product differentiation and the fact that many services are complementary to others. If governments impose barriers to the import of services, terms of trade may improve but the efficiency of production is simultaneously reduced. It is very likely that the costs will be higher than the profits brought by the improvement of terms of trade, so the imposition of barriers to trade in services is undesirable.

In other words, policies that promote the liberalisation of trade in services improve the efficiency of resource allocation in the economy. But the liberalisation of services may require governments to face the issue of monopolisation. In areas such as electric power or communication services where there are substantial economies of scale, monopolistic distortions may arise both domestically and internationally. Effective competition policies are vital in such cases.

Concluding remarks

APEC's most significant goal is sustainable development in the Asia Pacific region. Such development should include the expansion of trade in goods and services, investment, personnel exchanges, and networks of transportation and information. Policymakers in APEC member countries must be actively involved in the process. In order to gain the maximum benefits from

development, governments must promote not only liberalisation and facilitation but also economic and technical cooperation.

In this paper, we examine the significance of trade in services in the Asia Pacific region through an analysis of human resource development and the exploitation of advanced technology through economic and technical cooperation. Trade in services has increased among APEC member countries and throughout the world. Balance of payments figures suggest that trade in services is about 20 per cent of total trade, but this is an underestimate because it does not capture all services. We provide a theoretical background to the economics of services, discussing trade in services, trade liberalisation, the nexus between trade in services and economic growth, and the role of domestic regulation as a major barrier to trade in services. APEC aims to reduce trade barriers, encourage economic cooperation and promote policy adjustment. It can do this by focusing on both economic and political problems.

We focus on the liberalisation of trade in services. But improvements in human resources are also necessary to achieve sustainable economic growth. In particular, human resources are the key factor in the growth of economic activity based on knowledge. There is a need to improve educational programs, provide greater educational opportunities, improve communication and distribute information. Technological innovation will not occur unless manufacturers, managers and researchers can adapt to people's changing economic needs. And if APEC member countries have very different levels of management skills or administration capabilities, it will be hard to increase the effectiveness of liberalisation without reinforcing technical cooperation. Each country must be willing to ensure that trade in services expands smoothly and must also be committed to achieving greater consistency between member countries. This will require collaboration in obtaining appropriate human resources and training personnel.

Trade in services requires economic and technical cooperation, including the effective utilisation and distribution of available resources through improved access to information and the promotion of personnel training, networks and partnerships. Such cooperation must occur in all fields related to trade in services.

The idea of PECC was propounded in the mid-1960s, and it is developing shape as APEC. The development of economic cooperation in Asia and the Pacific has not been rapid, and problems remain. But we believe that the Asia Pacific economic order of the 21st century can be built by patiently improving and strengthening the APEC system.

Notes

- 1 See APEC (1995) for more detail.
- 2 ILO, *Yearbook of Labour Statistics*, various years.
- 3 Some service activities such as education or telecommunications, are ascribed to final consumption, and are also a vital component of many other service sectors. In particular, in mode 1, telecommunications are an important factor and have some characteristics of production services. Telecommunication services, which could be in the category of mode 1, can be considered as production services.
- 4 Data for GDP per capita (purchasing power parity in US dollars) were taken from IMF (2003); data for knowledge workers were taken from APEC (2000).
- 5 See ADB, *Annual Report*, various years.
- 6 See Hallak (1990).
- 7 The concept of the knowledge-based economy concerns the knowledge needed to be the main driver of growth, wealth creation and employment across all industries (APEC 2000).
- 8 As we have mentioned before, it is difficult to capture the effect of service activities through statistics, although ICT has resulted in better productivity in both the information processing industry (for example, financial services or communications services) and also many service businesses (for example, goods distribution, transportation, wholesale activities, retail activities and so on).
- 9 This is not an immediately practical policy option.

References

- ADB (Asian Development Bank) (various years) *Annual Report*, Manila: ADB.
- (1993) *The Strategic Context of Bank Involvement in the Telecommunications Sector*, Manila: ADB.
- (1995a) *The Bank's Medium-term Strategic Framework (1995–1998)*, Manila: ADB.
- (1995b) *Indonesia Private Junior Secondary Education Project*, Manila: ADB.
- APEC (Asia Pacific Economic Cooperation) (1995) *The Osaka Action Plan: Roadmap to realising the APEC vision*, Singapore: APEC.
- (2000) *Towards Knowledge-based Economies in APEC*, Singapore: APEC.
- Bayoumi, T., D.T. Coe and E. Helpman (1999) 'R&D spillovers and global growth', *Journal of International Economics* 47: 399–428.
- Choi, B.-i. (2000) *Digital Divide in APEC: Myth, Realities and a Way Forward*, Seoul: Korea Institute for International Economic Policy.
- Coe, D.T., E. Helpman and A.W. Hoffmaister (1999) 'North-south R&D spillovers', *Economic Journal* 107: 134–149.

- Deardorff, A.V. (2001) 'International provision of trade in services, and fragmentation', *Review of International Economics* 9(2): 233–248.
- Findlay, C. and J.-D. Kim (2001) *Issues in Domestic Regulation of Services*, Singapore: APEC.
- Findlay, C. and T. Warren (eds) (2000) *Impediments to Trade in Services: Measurement and Policy Implications*, Routledge Studies in the Growth Economies of Asia, London and New York: Routledge.
- GATS (1995) *GATS: The General Agreement on Trade in Services: A Guide for Business*, issued by the European Commission, Luxembourg.
- Goldsmith, R.W. (1969) *Financial Structure and Development*, New Haven: Yale University Press.
- Gordon, R.J. (2000) 'Does the "new economy" measure up to the great inventions of the past?', *Journal of Economic Perspectives* 14(4): 49–74.
- Hallak, J. (1990) *Investing in the Future: Setting Educational Priorities in the Developing World*, Paris: UNESCO International Institute for Educational Planning.
- Hill, T.P. (1977) 'On goods and services', *Review of Income and Wealth* 23: 315–338.
- Hoekman, B. and C.A. Primo Braga (1997) 'Protection and trade in services', *Policy Research Working Paper 1747*, World Bank, International Economics Department, International Trade Division.
- ILO (International Labour Organisation) (various years) *Yearbook of Labour Statistics*, Geneva: ILO.
- IMF (International Monetary Fund) (2003) *World Economic Outlook Database*, September, downloadable from <<http://www.imf.org/external/pubs/ft/weo/2003/02/data/index.htm>>.
- Jones, R.W. and H. Kierzkowski (1990) 'The role of services in production and international trade: a theoretical framework', in R.W. Jones and A.O. Krueger (eds), *The Political Economy of International Trade*, Oxford: Blackwell, pp. 31–48.
- Jorgenson, D.W. and K.J. Stiroh (2000) 'Raising the speed limit: US economic growth in the information age', *Brookings Papers on Economic Activity* 1: 125–235.
- Krugman, P.R. (1990) *Rethinking International Trade*, Cambridge MA and London: MIT Press.
- Markusen, J.R. (1989) 'Trade in producer services and in other specialised, intermediate inputs', *American Economic Review* 79: 85–95.
- Mattoo, A., R. Rathindran and A. Subramanian (2001) 'Measuring trade in services liberalisation and its impact on economic growth: an illustration', World Bank Group Working Paper, downloadable from <http://econ.worldbank.org/files/2373_wps2655.pdf>.
- Primo Braga, C.A. (1996) 'The impact of the internationalisation of services on developing countries', *Finance and Development* 33: 34–37.
- Primo Braga, C.A. (1997) 'Liberalising telecommunications and the role of the World Trade Organization', *Public Policy for the Private Sector*, Note 120.
- Roller, L. and L. Waverman (2001) 'Telecommunications infrastructure and economic development: a simulations approach', *American Economic Review* 91: 878–909.
- Sampson, G.P. and R.H. Snape (1985) 'Identifying the issues in trade in services', *World Economy* 8: 171–182.
- Sidorenko, A. and C. Findlay (2001) 'The digital divide in East Asia', *Asian-Pacific Economic Literature* 15(2): 18–30.

- Stern, R.M. and B.M. Hoekman (1988) 'Conceptual issues relating to services in the international economy', in C. H. Lee and S. Naya (eds), *Trade and Investment in Services in the Asia Pacific Region*, Boulder CO: Westview Press, pp. 7–25.
- UNESCO (United Nations Educational, Scientific and Cultural Organization) (1996) *World Education Report 1996*, Paris: UNESCO.
- Urata S. and K. Kiyota (2003) 'Services trade in East Asia', in T. Ito and A.O. Krueger (eds), *Trade in Services in the Asia Pacific Region*, National Bureau of Economic Research, University of Chicago Press, pp. 379–427.
- World Bank (1994) *World Development Report 1994*, New York: Oxford University Press.
- (1997) *World Development Report 1997*, New York: Oxford University Press.
- WTO (World Trade Organization) (2001) *International Trade Statistics*, Geneva: WTO.

Previous *Pacific Economic Papers*

- 339 The enigma of Toyota's competitive advantage: Is Denso the missing link in the academic literature?
Evelyn Anderson, 2003
- 338 An ASEAN Economic Community and ASEAN+3: How do they fit together?
Hadi Soesastro, 2003
- 337 Regional approaches to services trade and investment liberalisation
Jane Drake-Brockman, 2003
- 336 Beyond free trade agreements: 21st century choices for east Asian economic cooperation
Andrew Elek, February 2003
- 335 Trading with favourites: free trade agreements in the Asia Pacific
Christopher Findlay, Haflah Piei and Mari Pangestu, January 2003
- 334 WTO market access negotiations for non-agricultural products, Doha Round: Implications for East Asia
Kate Flowers and Malcolm Bosworth, December 2002
- 333 Regional approaches to services trade and investment liberalisation
Jane Drake-Brockman and Peter Drysdale, November 2002
- 332 Strengthening regional financial cooperation in East Asia
Haruhiko Kuroda and Masahiro Kawai, October 2002
- 331 Moving beyond bilateralism? Japan and the Asian Monetary Fund
Jennifer Amyx, September 2002
- 330 Impact of APEC trade liberalisation on Sino–Australian bilateral trade
Yu Sheng, August 2002
- 329 Intra-industry foreign direct investment and intra-industry trade: a case study of Korea
Jung-Soo Seo, Jong-Soon Kang and Deok-Ki Kim, July 2002
- 328 The effects of the euro on financial markets, activity and structure
Werner Studener, June 2002
- 327 The compatibility of capital controls and financial development: a selective survey and empirical evidence
Menzie D. Chinn, May 2002

- 326 The Basel Process and regional harmonisation in Asia
Shinichi Yoshikuni, April 2002
- 325 Trends in global finance, markets and institutions: some implications for developments in the Asian Region
William E. Alexander, March 2002
- 324 The IMF and East Asia
Gordon de Brouwer, February 2002
- 323 APEC and the new economy
Mari Pangestu and Sung-hoon Park, January 2002
- 322 East Asian steel projections for the 1990s revisited
Ben Garvey and Peter Drysdale, December 2001
- 321 Evidence of shifts in the determinants of the structure of Japanese manufacturing trade, 1970–95
Peter Drysdale and Ligang Song, November 2001
- 320 The services content of Japanese trade
Kozo Kiyota, October 2001
- 319 Changes in the Japanese food sector
Ray Trewin et al., September 2001
- 318 The changing economic performance and political significance of Japan's agricultural cooperatives
Yoshihisa Godo, August 2001
- 317 Bank and corporate restructuring in crisis-affected East Asia: from systemic collapse to reconstruction
Masahiro Kawai, July 2001
- 316 Hot and spicy: ups and downs on the price floor and ceiling at Japanese supermarkets
Kenn Ariga, June 2001
- 315 China's admittance to the WTO and industrial structural adjustment in the world economy
Christopher Findlay, May 2001
- 314 'Japan Inc.' in the agricultural sector: reform or regression?
Aurelia George Mulgan, April 2001
- 299 Japanese foreign direct investment in the world economy 1951–1997
Roger Farrell, January 2000

- 298 The genesis of APEC: Australian–Japanese political initiatives
Takashi Terada, December 1999
- 297 Is shutting Krugman’s ‘liquidity trap’ the answer to Japan’s problems?
Dominic Wilson, November 1999
- 296 Japanese government–business collaboration and the operations of Japanese corporations in Asia: A telecommunications case
Hidetaka Yoshimatsu, October 1999
- 295 Free trade champion? Australian views of the US crusade against Japan
Julia Lowell, September 1999
- 294 Governance and Australian financial institutions
Kevin Davis, August 1999
- 293 The changing climate for foreign direct investment into Japan
Peter Drysdale, Ray Trewin, Toshi Naito and Dominic Wilson, July 1999
- 292 The Japanese origins of PAFTAD: The beginning of an Asian Pacific economic community
Takashi Terada, June 1999
- 291 Not just a question of multilateral free trade: Australia’s bilateral trade liberalisation agenda towards Japan
Jamie Anderson, May 1999
- 290 Perspectives on Japanese investment, employment and management in Australia
Roger Farrell and Peter Drysdale, April 1999
- 289 Predicting banking crises: Japan’s financial crisis in international comparison
Michael Hutchinson and Kathleen McDill, March 1999
- 288 Japan’s financial reform Volume I
Hugh Patrick, Takatoshi Ito, February 1999
- 287 International trade and environmental policy: how effective is ‘eco-dumping’?
Xinpeng Xu, January 1999
- 286 Open regionalism going global: APEC and the new transatlantic economic partnership
Andrew Elek, December 1998
- 285 Realism and postwar US trade policy
John Kunkel, November 1998
- 284 Attracting FDI: Australian government investment promotion in Japan, 1983–96
Jamie Anderson, October 1998

- 283 The Multi-function polis 1987–97: an international failure or innovative local project?
Paul Parker, September 1998
- 282 Organisation, motivations and case studies of Japanese direct investment in real estate 1985–94
Roger Farrell, August 1998
- 281 Japan's approach to Asia Pacific economic cooperation
Peter Drysdale, July 1998
- 280 The politics of telecommunications reform in Japan
Hidetaka Yoshimatsu, June 1998
- 279 Sustainability of growth in the Korean manufacturing sector
Chang-Soo Lee, May 1998
- 278 Export performance of environmentally sensitive goods: a global perspective
Xinpeng Xu, April 1998
- 277 Modelling manufactured exports: evidence for Asian newly industrialising economies
Francis In, Pasquale Sgro and Jai-Hyung Yoon, March 1998

Annual subscription rate for twelve issues:

Individuals A\$65.00
Institutions A\$110.00

Cost for single issues:

A\$15.00
A\$10.00 (Students)

No postage required within Australia

Available from: Publications Department
Australia–Japan Research Centre
Asia Pacific School of Economics and Management
The Australian National University
Canberra ACT 0200, Australia
Facsimile: (61 2)6125 0767
Telephone: (61 2)6125 3780
E-mail: ajrc@anu.edu.au
URL: <http://ajrcnet.anu.edu.au/>