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ABBREVIATIONS

ABS	Australian Bureau of Statistics
APEC	Asia Pacific Economic Cooperation
BOP	Balance of payments
CEE	Central and Eastern Europe
DFAT	Department of Foreign Affairs and Trade
FDI	Foreign direct investment
FIRB	Foreign Investment Review Board
GATS	General Agreement on Trade in Services
GATT	General Agreement on Trade and Tariffs
GDP	Gross domestic product
IMF	International Monetary Fund
MAI	Multilateral Agreement on Investment
MFN	Most favoured nation
OECD	Organisation for Economic Cooperation and Development
PECC	Pacific Economic Cooperation Council
TRIMs	Trade related investment measures
UNCTAD	United Nations Conference on Trade and Development
USITC	United States International Trade Commission
WTO	World Trade Organization

SUMMARY

Services trade and foreign direct investment

Driven by technological advances, goods trade liberalisation and deregulation of service industries in many economies, services trade has grown rapidly in recent years and the range of services traded internationally has widened. Services traded by the temporary movement of people (as in tourism or education) or by cross-border trade (as in international telephone services) now account for one fifth of the value of world trade in goods and services. This share would increase substantially if services traded via foreign direct investment (FDI) were taken into account.

FDI plays a key role in services trade. Establishing a commercial presence in a country, often through FDI, is an important mode of delivery for some services, particularly where ongoing contact with consumers is important or the nature of the services means that other modes of supply are not feasible or viable.

FDI and services trade liberalisation

Restrictions on FDI can therefore potentially have significant implications for services trade. Through the General Agreement on Trade in Services (GATS), Australia and other World Trade Organization (WTO) members have made commitments to create a more liberal trading environment for services. The GATS explicitly incorporates establishment of commercial presence, including FDI, as one of the modes of service supply. However, the scope of the commitments is limited and many barriers remain.

FDI restrictions are applied for a range of economic, political, social and cultural reasons. For example, foreign control of media assets may be restricted to protect national cultural identity. Restrictions on foreign ownership of transport sector assets may be designed to protect national security.

There are economic costs associated with these types of restrictions. The most efficient and innovative suppliers may not get access to service markets, and consumers of services may face higher prices and less choice as competition from foreign suppliers is restricted. These effects quickly spread through economies, because many services are used in the production and trade of other goods and services.

Gains from removing FDI barriers?

Considerable progress has been made in recent years in the analysis of barriers to goods trade and the potential gains from liberalisation. Estimates of the potential economy-wide benefits of removing tariffs and other trade barriers have helped to provide the impetus for ongoing reform.

In contrast, the information base and tools for analysis of FDI barriers are very limited. To develop a clearer picture of the implications of FDI barriers, and the possible gains from further liberalisation, more information is needed on the nature and extent of the existing barriers and how they affect services trade and economies generally. Some suggestions for quantifying FDI barriers and modelling their impact are provided in this report.

Quantifying FDI barriers

A vast range of measures is used to control or influence FDI throughout the world. In essence, the measures involve some restriction on the value of foreign investment (say a limit on the share of foreign ownership in a sector or firm), or some measure which makes the foreign investment more costly (say by requiring the investor to go through a screening process, or by restricting the inputs used by the foreign firm).

In principle, the impacts of these restrictions on asset prices or prices for the services in the restricted markets would be useful measures of the extent or size of the FDI barriers. These ‘tariff equivalents’ could provide a basis for comparing FDI regimes across economies, and would be a useful starting point for modelling the general equilibrium effects of liberalisation.

However, there are many practical difficulties with trying to observe ‘tariff equivalents’ directly. Isolating the effects of FDI regimes from other effects on prices is difficult. As is the case for non-tariff barriers to goods trade, alternatives to simple price or cost wedges often have to be used to summarise the extent of FDI restrictions.

As an alternative to price wedge measures, a set of indices of the degree of openness to FDI in 15 APEC economies is developed in this report. For each economy, indices are calculated for 11 of the 12 services sectors defined in the GATS (‘other services’ are not covered).

The methodology is basically an extension of previous frequency measures, incorporating more detailed information on the number and type of restrictions in each economy and sector. Information on four different types of FDI restrictions is included. Various scores are applied across restrictions — from 1

for a complete ban on foreign investment, down to 0.05 where the only requirement is that the investor notifies the relevant authority of the investment.

The results indicate that FDI is relatively heavily restricted in key services sectors such as communications, transport and financial services. In contrast, FDI is relatively unrestricted in business services. Across the economies analysed, FDI is relatively restricted in Korea, Indonesia, Thailand, China and the Philippines. The economies with the lowest index values are the United States and Hong Kong.

Modelling the implications of FDI liberalisation

Once some estimates of the size of FDI barriers are available, the next step is to use these to model the impacts of further liberalisation. Few attempts have been made to model the economy-wide impacts of investment liberalisation. Most studies have treated foreign investment as a simple flow of financial capital, with barriers to capital flows represented as limitations on capital mobility and violations of interest parity conditions. They have therefore been relevant to portfolio investment, but have not taken account of some of the economic factors driving FDI and its role in services trade.

To be policy relevant, the modelling framework should reflect the theoretical and empirical evidence on the role of FDI and the economic factors driving it. For example, FDI often involves firms investing to take advantage of some specific assets, such as particular expertise, that the parent may have. It is therefore important to model the links between the parent and the foreign affiliate. Further, the foreign firm may be able to distinguish the services it supplies from those of domestic firms, say due to its international reputation, and it is therefore important to distinguish between output from the foreign affiliate and domestic firms.

One way to develop the analysis of the role of FDI and the impacts of further liberalisation is to incorporate these types of relationships into existing models of the Australian economy. This task would be data intensive, and the policy simulations would be limited to unilateral liberalisation.

An alternative is to develop a multi-country model of FDI flows, along the lines of Petri (1997a), to separate out Australia and some key service sectors, and incorporate the ‘tariff equivalents’ of FDI barriers developed in this report.

The need for information and analysis of FDI barriers is likely to become more pressing over the next few years, as WTO members implement the GATS and work toward renegotiation of the Agreement in 2000, APEC members begin to implement the commitment to free and open investment, and OECD members work towards a multilateral agreement on investment (MAI). Further

development of the tools for delivering the required analysis would therefore be a valuable exercise.

1 INTRODUCTION

The growing importance of services in world trade and investment and the signing of the first binding multilateral agreement covering trade in services, the General Agreement on Trade in Services (GATS), raise a set of new analytical and policy issues. While the nature and extent of impediments to goods trade are now quite well documented and understood, relatively little progress has been made in analysing impediments to services trade (see Hoekman and Braga 1997 and Hufbauer 1996). This is particularly true for an often overlooked mode of services trade — commercial presence. Establishing a commercial presence in a country, usually through foreign direct investment (FDI), is the primary way in which many services are traded internationally. For example, foreign banks and telecommunications companies often invest directly in a country to deliver their services in the most efficient way.

All APEC, OECD and WTO member economies currently place some restrictions on inward FDI. At the same time, some economies offer incentives to attract foreign investment, often on an ad hoc basis and often with conditions attached. Policies to control or influence FDI are designed to achieve a range of economic, political and social objectives. Restrictions on FDI in key service sectors such as broadcasting, telecommunications or transport may be designed to address national security or national sovereignty concerns. Investment incentives may be provided in an attempt to compete with other economies in attracting FDI and capturing perceived benefits such as increased local employment or transfers of technology.

Each of these policies distort the market signals which drive foreign investment, and could potentially have a significant impact on trade in services. For example, restricting foreign investment in certain service sectors may result in less competition in those markets, less diversity and innovation in the services offered, and higher prices as foreign service suppliers must enter markets via alternative, less efficient, means than FDI — if they enter at all. These types of economic costs must be balanced against the perceived benefits of maintaining control over FDI.

The importance of removing impediments to FDI as part of services trade liberalisation has been recognised to some extent by WTO members, in the signing of the GATS which covers barriers to foreign firms establishing a commercial presence through FDI. The need to address FDI barriers has also been recognised in a number of other fora. For example, APEC economies

have committed to free and open trade and investment by 2010 in industrialised economies and 2020 in developing economies, and have endorsed a set of non-binding investment principles. OECD members are currently working toward establishment of a multilateral agreement on investment (MAI), with the aim of significantly liberalising foreign investment.

An important constraint on the effectiveness of these commitments and instruments is the absence of measures of the nature and extent of FDI barriers, and analytical frameworks for assessing their implications, not only for services trade, but for trade in goods and the overall economic performance of economies. Decisions to liberalise FDI regimes often involve complex trade-offs between economic and other considerations such as national sovereignty. Therefore, governments need to have a good factual and analytical basis for decision making.

To compare the degree of openness to FDI across economies, to monitor progress in liberalisation, and to model the possible gains from further liberalisation, some reliable and acceptable measures or indicators are necessary. The Commission recently highlighted the need for further studies to document and analyse the economic effects of barriers to foreign investment in its report on the impact of firms locating offshore (IC 1996b).

The aims in this report are to:

- examine the role of FDI in the delivery of services (Chapter 2);
- identify the implications of the GATS for FDI (Chapter 3); and
- analyse ways of quantifying FDI barriers and estimating the potential gains from their removal (Chapters 4, 5 and 6).

2 SERVICES TRADE AND THE ROLE OF FDI

The services sector is an important and growing part of the world economy, accounting for the majority of production and employment in most industrialised countries. The search for efficiency in the provision of services has prompted governments around the world to embark on deregulation and liberalisation programs for many of their service industries. These moves, together with advances in information and telecommunications technology, have seen services trade grow rapidly over the last twenty years. Services traded cross-border and by the temporary movement of people now account for 20 per cent of global trade in goods and services.

However, an important mode of services trade — foreign direct investment — is often overlooked. In some sectors, such as banking, FDI is likely to be the major mode of service delivery. Estimates for the United States indicate that the value of services imported via FDI is 30 per cent higher than the value of services imported cross-border and by the temporary movement of people. Therefore, eliminating impediments to foreign direct investment will be an important part of services trade liberalisation.

2.1 Services trade

The growth of an economy's service sector is an important aspect of its development and is strongly associated with product specialisation, income growth and economic modernisation. The production of services typically accounts for the largest share of economic activity in developed countries and a comparable share of employment (Table 2.1). While the proportion of GDP attributable to services is generally lower in developing countries than developed countries, the relative importance of the service sector is increasing for most countries. Moreover, the importance of services to an economy is even greater than that reflected in direct sectoral shares of GDP because services are inputs for all aspects of processing and production.¹

¹ In Australia, almost one-third of services produced are used as intermediate inputs for producing downstream products (IC 1996a).

Table 2.1: **Service sector shares of GDP and employment for selected countries, 1985 to 1994**

Country	GDP			Employment		
	1985	1990	1994	1985	1990	1994
	% of total GDP			% of total employment		
Australia	66	69	73	66	69	71
Canada	54	56	58 ^a	69	71	73
France	61	64	67	53	64	69
Germany	53	54	34	54	57	59
Indonesia	41	38	42	na	31	na
Italy	58	61	63	55	59	60
Japan	58	60	63	56	59	60
Korea	45	46	50	na	47	na
New Zealand	60	62	61 ^a	57	65	65
Philippines	41	43	45	na	39	na
Thailand	53	48	50	na	22	na
Singapore	62	63	64	na	64	na
United Kingdom	51	58	60	65	69	72
United States	68	71	70 ^b	69	71	73

a 1992.

b 1993.

na not available.

Source: DFAT (1997) and World Bank (1987, 1992, 1996).

As services provide much of the necessary infrastructure for investment and economic growth, ensuring their efficient delivery is an important means of improving an economy's overall productivity. The nature of services — their intangibility, non-storability and hence non-transportability — and the protection of services trade and investment have limited, until recently, the choice of services provision largely to domestic suppliers. However, in the past thirty years, and particularly since the mid 1980s, the environment for international service transactions has changed considerably. The most important of these changes have been the reduction in technological and policy related barriers to the movement of services and firms. International transactions, which in earlier times would have been impossible or prohibitively expensive, have now become commonplace because of the ease with which people can move and communicate across international boundaries.

Advances in information and communication technologies, in particular, have made it possible for firms to process and communicate more information at reduced costs and to manage effectively their production and services activities around the world. The ability to combine information and telecommunications technologies has increased the transportability of many information-based services, enabling them to be traded across distances without necessarily being embodied in people or goods. At the same time, advances in physical transportation have further facilitated the movement of goods and people.

As a result, international trade in services has grown rapidly over the past twenty years. As shown in Table 2.2, in 1995, global services trade (services credits in the balance of payments) was some US\$1 200 billion. This was equal to 20 per cent of global trade (goods credits plus services credits), compared with 16 per cent in 1980. The average annual growth rate of global services trade was 9 per cent between 1988 and 1994, compared with 7 per cent growth in merchandise exports over the same period (DFAT 1997). Although the share has declined in the past ten years, OECD countries continue to account for the majority of global services trade. The relative importance of services trade has increased in most countries. Non-OECD countries, in particular, have recorded strong growth in the relative importance of services trade, although from a much smaller base than OECD countries.

Table 2.2: Global trade in services, 1980 to 1995^a

	<i>1980</i>	<i>1985</i>	<i>1990</i>	<i>1995</i>
Total trade in services	US\$361 billion	US\$387 billion	US\$861 billion	US\$1 234 billion
OECD share	83%	83%	78%	73%
Rest of World share	17%	17%	22%	27%
Services share of goods and services trade	16%	17%	20%	20%
OECD	19%	20%	21%	20%
Rest of World	9%	11%	17%	18%

a Data pertain only to countries reporting to the IMF.

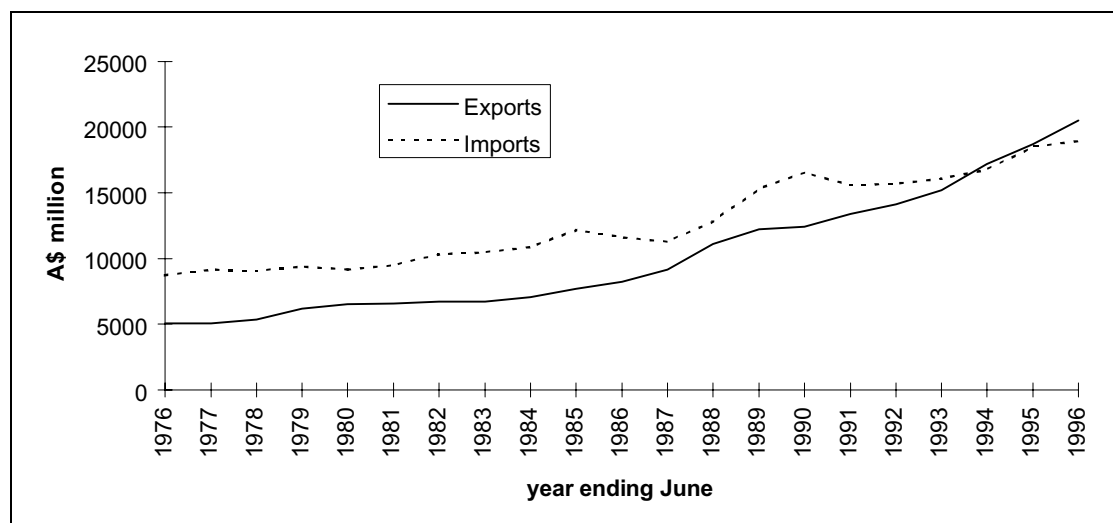
Sources: IMF (1996a; 1996b).

Detailed services data are very limited compared with data for merchandise trade. Only a limited number of industrialised countries collect and report statistics on trade in services at a relatively disaggregated level. Most non-OECD countries report data on trade in services in three categories: transport

services; travel services; and other services (which includes financial services, insurance services, communications services and construction services). World trade in transport services, which in 1995 accounted for 24 per cent of world trade in services, increased at an average annual rate of 6 per cent between 1990 and 1995. Trade in travel services accounted for 31 per cent of world trade in services in 1995 and grew by 8 per cent a year in the five years to 1995. Trade in other services accounted for 44 per cent of world trade in services in 1995 and grew by almost 8 per cent annually between 1990 and 1995.

Although Australia's services trade has grown strongly over the past twenty years, its share of world services exports has remained fairly constant at around 1.3 per cent. Australia's services exports increased at an average rate of 7 per cent annually between 1975–76 and 1995–96, increasing more rapidly in the past five years at 9 per cent per year (Figure 2.1). Australia's services imports have increased considerably more slowly than exports, at an average annual rate of 4 per cent between 1975–76 and 1995–96 and at the same rate over the past five years. As a result, Australia's exports of services exceeded imports of services in 1995–96 by \$93 million (current prices).

Figure 2.1: Australia's exports and imports of services 1975–76 to 1995–96 (constant 1989–90 prices)

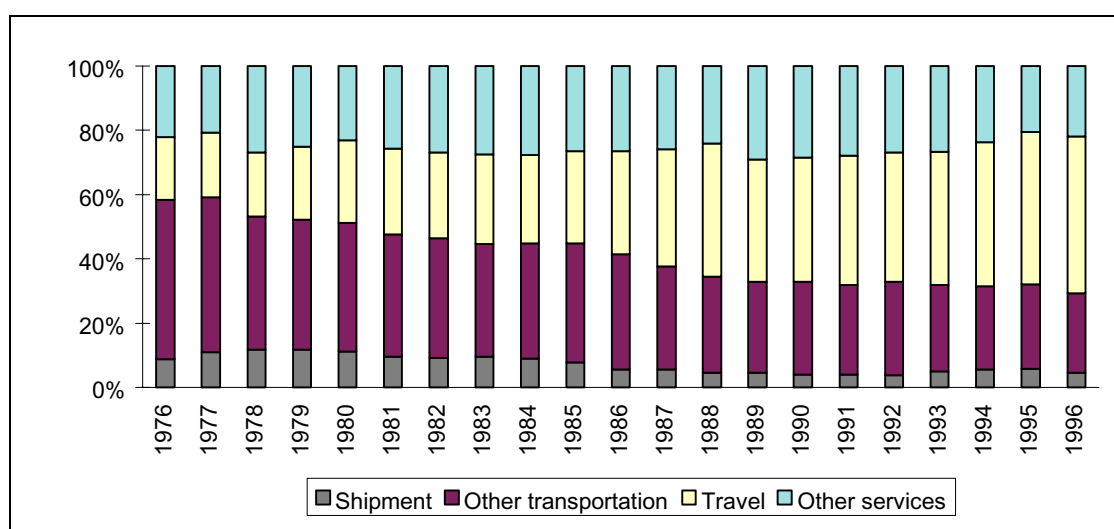


Source: ABS Catalogue 5302.0.

As in other OECD countries, the relative importance of Australia's services exports has increased over the past decade. In 1985–86 services accounted for 17 per cent of Australia's total exports, increasing to 23 per cent by 1995–96. Services imports as a share of total Australian imports have remained fairly constant over the last decade at around 23 per cent.

The composition of Australia's services exports has changed considerably over the past twenty years (Figure 2.2). The share of services exports accounted for by travel increased from 20 per cent in 1976 to nearly 50 per cent in 1996. This increase was mainly at the expense of other transportation exports, the share of which fell from 50 per cent of services exports in 1976 to 25 per cent in 1996. There has been less variation in the composition of Australia's imports of services. The share of services imports accounted for by shipment services fell from 27 per cent in 1976 to 20 per cent in 1996, while the shares accounted for by travel and other services increased slightly.

Figure 2.2: Composition of Australia's service exports, 1976 to 1996



Source: ABS Catalogue 5302.0.

2.2 Modes of services delivery

The services trade data reported above are recorded in a country's balance of payments as services credits (exports) and services debits (imports). These data generally include services which are traded across borders (for example, via telecommunications media), via physical movement of consumers to the location of service providers and via temporary entry of service providers into the territory of a consumer. This definition of services trade is narrower than that used in the General Agreement on Trade in Services (GATS), which includes four modes of delivery.

- The first mode is *cross-border supply*, with neither the consumer moving nor the supplier establishing itself abroad. The supplier either mails, electronically transmits, or otherwise transports a service across a

national border. For example, architectural services may be provided in the form of design drawings sent via mail to a consumer in a foreign country.

- The second mode of supply is *consumption abroad*, where consumers, such as a tourists or students, travel across national borders to avail themselves of a service.
- In the third mode, *commercial presence*, a service supplier establishes a foreign-based corporation, joint venture, partnership, or other establishment, to supply services to persons in the host country.
- *Presence of natural persons* is the fourth mode of delivery and involves an individual, functioning alone or in the employ of a service provider, temporarily travelling abroad to deliver a service.

Services traded internationally by the third mode of delivery, commercial presence, are not recorded as services trade in balance of payments statistics. However, the special nature of services suggests that this is likely to be the dominant mode of delivery for many services. The provision of services such as entertainment, recreation and educational services requires interaction between producers and consumers, and often these services have to be consumed simultaneously with production. As a result, they cannot be transported and therefore traded cross-border. Some services such as consulting and tourism can be delivered through the temporary movement of either producers or consumers, but others require producers to establish a long-term physical presence in the foreign market.

Direct interaction is often the preferred means of delivery for many services, even though cross-border trade is technically possible. Services such as advertising and architectural services could be produced in one location and mailed to another destination. The option to trade these services cross-border is being opened further by the advances in communications and information technology. However, the need to respond to consumer preferences which are determined by factors such as language and culture requires a presence in the market. A commercial presence may also be preferred because interaction between consumers and producers may be difficult to maintain across long distances.

There are some data available which provide an indication of the relative importance of commercial presence as an international mode of delivery for services. The United States collects detailed data on both its trade in services and services which are delivered through sales of affiliates of US parent companies. These data suggest that cross-border trade and foreign affiliate sales are of roughly the same importance. In 1992, cross-border trade and the temporary movement of consumers and producers accounted for 48 per cent of

US services exports, with the remaining 52 per cent accounted for by foreign affiliates of US firms (USITC 1995).

A similar finding was made by Petri (1997a) using detailed survey data from the United States and Japan. Petri found that world-wide services output of foreign-invested firms was US\$528 billion in 1992, slightly less than world-wide services imports of US\$580 billion. For the United States, Canada, Australia and New Zealand together, Petri estimated that services output of foreign-invested firms was nearly three times services imports. UNCTAD (1996) found that for goods and services combined, sales of foreign affiliates were 28 per cent greater in value than cross-border trade. However, the relative importance of services was not identified separately.

Reflecting the diverse economic and technical characteristics of services, the relative importance of different modes of supply varies widely across services. Exports via consumers moving to the suppliers account for virtually all the value of educational and tourism services supplied internationally by US firms. In contrast, sales by foreign affiliates tend to be far more important than exports for services such as insurance, computer and data processing and advertising (UNCTAD 1994).

While the sales of foreign affiliates provide an insight into the importance of commercial presence as a mode of international services trade, this report is concerned with the barriers that distort the pattern of services traded through commercial presence. These barriers are generally applied on the flows of foreign investment which are aimed at establishing a commercial presence in the foreign market and not on the sales of foreign affiliates directly.

The principal method by which foreign firms establish a commercial presence is through foreign direct investment (FDI). FDI involves a foreign firm or individual acquiring a controlling interest in a firm in a host country or establishing a new firm or subsidiary in the host country. Most countries distinguish FDI from other investment by setting a minimum limit, such as 20 per cent, on foreign equity participation. However, this criterion varies and often understates or overstates foreign control. The Australia Bureau of Statistics (ABS) defines FDI as investment over which a foreign domiciled person or corporation has potentially significant influence. Foreign ownership of 10 per cent of the ordinary shares of voting stock in a company is considered the minimum ownership level for foreign investment to be classified as FDI (ABS 1994). Foreign investment not classified as FDI is known as portfolio investment.

Other methods by which a commercial presence could be established include non-equity arrangements such as franchises or partnerships or minority joint

ventures (which are below the minimum limit to be classified as FDI). These methods of establishing a commercial presence are often used by service companies such as hotels, restaurants and fast-food companies and to a lesser extent by professional services such as accounting and legal services. In some cases the costs of these types of arrangements may not offset the benefits, particularly where the operation involves extensive knowledge or human capital or intangible assets (Markusen 1995), and so FDI may be the preferred means of establishing commercial presence.

FDI is the most important method by which firms establish a presence in foreign markets and is particularly important for services such as banking and insurance.² Therefore, it is important to examine the major sources and hosts of FDI flows and stocks³ as a basis for identifying the impact of impediments to establishing a commercial presence in foreign markets and hence delivering services.

2.3 International FDI trends

Global inflows of FDI reached record levels in 1995. Inflows rose by 9 per cent to US\$226 billion in 1994 and by another 40 per cent in 1995 to reach US\$315 billion. FDI outflows also increased substantially in 1995 to US\$318 billion. Developed countries continue to account for the majority of both inflows and outflows of FDI, although their shares of both are declining (Table 2.3). The growth in flows has expanded the world's FDI stock, valued at about US\$2.7 trillion in 1995. That stock belongs to some 39 000 parent firms and their 270 000 affiliates abroad.

The United States was the largest host for and source of FDI in 1995, with US\$60 billion of inflows and US\$96 billion of outflows. Germany was the largest investor in the United States in 1995 with US\$11 billion, followed by the United Kingdom with US\$10 billion. The United States invested heavily

² As information technology advances further, the potential for cross-border trade in financial and other information intensive services will increase. The internet, in particular, is already emerging as an important international delivery channel for a wide range of financial services.

³ FDI stock is the value of foreign financial assets and liabilities at a specified date. FDI flows result in increases and decreases in these assets and liabilities. Changes in the stock of FDI between two dates can arise from causes other than FDI flows. These other changes may come about through exchange rate variations, through a change in the market value of a claim or through reclassification of an investment (eg from FDI to portfolio investment).

abroad, with outflows nearly twice as high as the next biggest investor, the United Kingdom.

Table 2.3: Global FDI inflows and outflows, 1983 to 1995

Year	<i>Developed countries</i>		<i>Developing countries</i>		<i>Central and Eastern Europe</i>		<i>All countries</i>	
	<i>inflows</i>	<i>outflows</i>	<i>inflows</i>	<i>outflows</i>	<i>inflows</i>	<i>outflows</i>	<i>inflow</i>	<i>outflows</i>
Value, US\$ billions								
1983-87	58.7	72.6	18.3	4.2	0.02	0.01	77.1	76.8
1988-92	139.1	193.3	36.8	15.2	1.36	0.04	177.3	208.5
1993	129.3	192.4	73.1	33.0	5.59	0.20	207.9	225.5
1994	132.8	190.9	87.0	38.6	5.89	0.55	225.7	230.0
1995	203.2	270.5	99.7	47.0	12.08	0.30	314.9	317.8
Share in total, per cent								
1983-87	76	95	24	5	0.02	0.01	100	100
1988-92	78	93	21	7	0.77	0.02	100	100
1993	62	85	35	15	2.70	0.09	100	100
1994	59	83	39	17	2.60	0.24	100	100
1995	65	85	32	15	3.80	0.09	100	100
Growth rate, per cent								
1983-87	37	35	9	24	-7	68	29	35
1988-92	-4	3	15	16	298	46	1	4
1993	13	6	45	52	46	99	24	11
1994	3	-1	19	17	7	179	9	2
1995	53	42	15	22	106	-45	40	38

Source: UNCTAD (1996).

Japan's FDI outflows recovered in 1994 and 1995 after a sharp decrease in 1993. In 1995, FDI outflows reached US\$21 billion, still less than half of the annual outflows of 1989–91. The recent increases in Japanese FDI have taken place in manufacturing and some services industries, unlike in the late 1980s when most FDI went into financial services and real estate.

FDI flows into developing countries also increased rapidly in 1995 to around US\$100 billion. China remained the single largest recipient of FDI flows among developing countries in 1995, accounting for some 40 per cent of total developing country inflows. Inflows into developing countries, other than

China, rose by 16 per cent between 1993 and 1994, and by another 10 per cent between 1994 and 1995. Outflows from developing countries rose from US\$39 billion in 1994 to US\$47 billion in 1995. Intra-regional FDI among developing countries has continued to increase in the 1990s, with more than half of the FDI flows from developing countries invested within the same region in 1994.

FDI inflows to Central and Eastern Europe (CEE) also increased in 1995. Having remained stagnant in 1994, FDI inflows to CEE nearly doubled in 1995, to an estimated US\$12 billion. The region now accounts for 4 per cent of world inflows, compared with only 1 per cent in 1991. Hungary and the Czech Republic accounted for the largest share of the increase of FDI in the region. Driven to a large extent by privatisations, inflows to both countries tripled in 1995, to US\$3.5 billion and US\$2.5 billion, respectively.

FDI in services has increased rapidly over the past two decades, reflecting the growing importance of the services sector in the world economy. In 1995, half the world's FDI stock was in services (around US\$1 330 billion), compared with only 30 per cent in 1970. Services also accounted for 60 to 65 per cent of the world's FDI flows in 1995. Sectoral data for individual countries are limited, although the OECD gathers some statistics on FDI which provide broad sectoral breakdowns.

In most OECD countries, services now account for about half of all inward FDI stock. Notable exceptions are Canada, where services account for only 33 per cent of total inward FDI stock, and Germany, where services account for 75 per cent (Table 2.4). Services also account for the majority of outward FDI stock in most OECD countries, with Norway as the exception in Table 2.4. Services share of total inward FDI stock increased for most OECD countries between 1984 and 1994, especially for Japan, Germany and the United Kingdom. The relative importance of services in the outward stock of most OECD countries has also increased since 1984, with Germany, Japan, the Netherlands and the United States recording large increases.

Table 2.4: Services FDI stock as a share of total FDI stock for selected OECD countries, 1984 and 1994

<i>Country</i>	<i>Inward FDI services stock</i>		<i>Outward FDI services stock</i>	
	1984	1994	1984	1994
	percentage of total FDI stock			
Australia	50	50	51	49
Austria	46	41	48	49
Canada	31	33	40	47
France	55 ^a	61	46 ^b	56
Germany	46	75	30	66
Japan	26	45	48	66
Netherlands	46	50	31	48
Norway	38 ^b	48	36 ^c	24
United Kingdom	25	41	35	41
United States	50	54	29	53

a 1989.

b 1987.

c 1988.

Source: OECD (1995, 1996b).

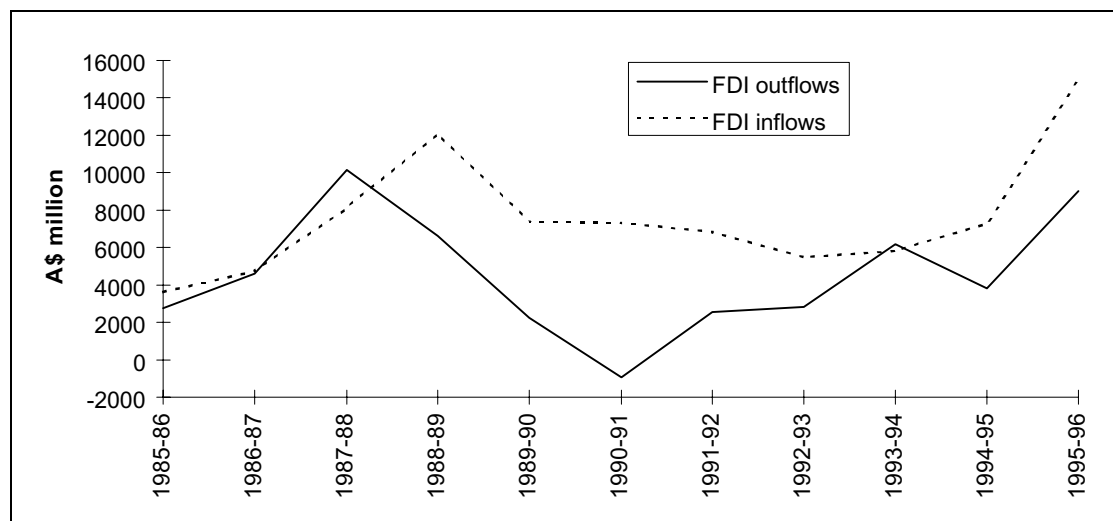
2.4 FDI in Australia

FDI flows into Australia grew rapidly in the second half of the 1980s and then slowed considerably in the early 1990s (Figure 2.3). In 1995–96, FDI inflows into Australia recovered strongly to reach \$14.9 billion, more than twice the level recorded one year before. Changes in the growth of Australia's FDI inflows are reflected in Australia's inward FDI stock. Even though FDI inflows slowed during the early 1990s, the value of Australia's FDI stock has more than trebled over the past 10 years, from \$40.7 billion in 1985–86 to \$146.5 billion in 1995–96.

Australian FDI outflows also grew strongly during the 1980s before falling rapidly between 1987–88 and 1990–91 (Figure 2.3). In 1990–91, Australia's FDI outflows were negative, representing a net withdrawal of Australia's direct investment abroad. FDI outflows recovered during the first half of the 1990s to reach \$9 billion in 1995–96. The growth in Australia's outward FDI stock slowed substantially during the early 1990s. Although FDI outflows recovered considerably over the first half of the 1990s, the growth of

Australia's outward FDI stock has not matched the strong growth recorded in the late 1980s. In 1995–96, Australia's outward FDI stock reached \$58 billion, compared with \$13 billion ten years earlier.

Figure 2.3: **Australia's FDI flows, 1985–86 to 1995–96**



Source: ABS (1994; 1997a).

Sectoral composition

At the sectoral level, stocks data provide a more accurate pattern of FDI trends than flows data, as large investments can cause substantial variations in the sectoral pattern of FDI flows from year to year. When examining the sectoral pattern of inward FDI, it is important to note that the industry category given in official statistics denotes the predominant activity of the enterprise group receiving the investment funds. This is not necessarily the industry of the end use of the funds (ABS 1997b). For example, it is likely that some of the FDI going into financial services is redirected to other industries, so that the importance of financial services may be overstated.

Over the past decade Australia's inward FDI stock has been dominated by the services sector.⁴ In both 1985–86 and 1995–96, services accounted for 55 per cent of Australia's total inward FDI stock, with little variation between these years. Within the services sector, finance and insurance services (including banks, building societies, credit unions, life insurance and superannuation

⁴ FDI stock in services is calculated as the residual of total FDI stock less agriculture, mining and manufacturing FDI stock, and therefore includes unallocated FDI stock.

funds) account for the largest share of FDI stock. In 1995–96 the FDI stock in finance and insurance reached \$30 billion, accounting for over one third of services sector FDI stock and 20 per cent of Australia’s total inward FDI stock. Foreign ownership in the financial sector is now substantial, with foreign owned institutions controlling 27 per cent of Australia’s financial system assets at the end of 1995–96. The proportion of assets controlled by foreign institutions varies considerably by type of institution — merchant banks assets are almost completely under foreign control, while building societies and credit unions remain 100 per cent domestically owned (Table 2.5).

Table 2.5: Financial system assets controlled by foreign owned institutions in Australia, June 1996 (per cent)

<i>Category of institution</i>	<i>Sector assets controlled by foreign owned institutions</i>
Banks	15
Building societies and credit unions	0
Merchant banks	94
Finance companies ^a	37
Other non-bank financial institutions ^b	30
Life companies ^c	36
Non-life super	27
Managers for public unit trusts	42
General insurance	31
Friendly society and common funds	0
Total	27

a Includes finance companies and pastoral financiers.

b Includes money market dealers, co-op housing, securitisers, intra group and other corporations.

c National Mutual included as foreign owned. The French company, AXA, owned 40 per cent of National Mutual Holdings as June 30 1996.

Source: FSI (1997).

Australia’s property and business services (including property operators and developers, real estate agents, scientific research, computer services, legal and accounting services and marketing and business management services) have also been important recipients of inward FDI, accounting for 13 per cent or \$19 billion of Australia’s total inward FDI stock. The FDI stock in wholesale trade was not published in 1995–96, but is likely to be an important FDI host, accounting for over 12 per cent of total FDI stock in 1994–95.

The mining and manufacturing sectors accounted for 14 per cent and 30 per cent of inward FDI stock, respectively, in both 1985–86 and 1995–96. The share of inward FDI stock accounted for by the agricultural sector declined from 0.9 per cent in 1985–86 to 0.4 per cent in 1995–96. Within the manufacturing sector, petroleum, coal, chemical and associated products attracted the highest level of foreign investment, with FDI stocks of \$15 billion (or 10 per cent of total FDI stocks) in 1995–96. Food, beverages and tobacco has also been a relatively important recipient of manufacturing FDI, with stocks reaching \$13 billion in 1995–96.

Australia's outward FDI stock is also dominated by the services sector — accounting for just under half of total outward FDI stock in 1995–96.⁵ Nearly 80 per cent of Australia's outward FDI stock in the services sector, and 40 per cent of total FDI stock, was accounted for by finance and insurance services in 1995–96. The next most important services sector was wholesale trade, accounting for 5 per cent of Australia's outward FDI stock in services.

The relative importance of mining as a destination for Australian investment abroad has fallen from 24 per cent of total outward FDI stock in 1985–86 to 17 per cent in 1995–96. A greater proportion of Australia's outward investment is now going into the manufacturing sectors of other countries, 35 per cent in 1995–96 compared with 23 per cent a decade earlier. Within the manufacturing sector, printing, publishing and recorded media accounted for about half of Australia's outward manufacturing FDI stock in 1995–96, with the next most important categories — petroleum, coal, chemical and associated products and metal products — accounting for \$2 billion or 12 per cent each of manufacturing FDI.

Major sources and destinations

FDI in Australia is dominated by developed countries, mainly the United States and the United Kingdom (Table 2.6). In 1995–96, 85 per cent of Australia's total inward FDI stock was sourced from OECD countries, with the United States and the United Kingdom together accounting for 54 per cent. However, the share of FDI sourced from these countries has fallen over the past 10 years. In 1985–86 OECD countries accounted for 92 per cent of Australia's inward FDI stock, with 64 per cent sourced from the United States

⁵ Outward FDI stock data for agriculture have not been published since 1988–89 and some services data are incomplete. Therefore, agriculture and services are combined and calculated as the residual of total outward FDI stock less mining and manufacturing. Outward FDI stocks in agriculture are believed to be minimal, accounting for only 0.2 per cent of Australia's total outward FDI stock in 1988–89.

and the United Kingdom. Japan is also an important source of FDI for Australia, accounting for 12 per cent of FDI stock in 1995–96.

In terms of FDI flows during 1995–96, the largest investors were the United States and the United Kingdom, accounting for 37 per cent and 26 per cent of FDI inflows, respectively. ASEAN economies were also an important source of FDI for Australia in 1995–96, accounting for 17 per cent of total FDI inflows. Japan, Canada and New Zealand, all of which have large FDI stocks in Australia, made net withdrawals of FDI from Australia in 1995–96.

Table 2.6: Major sources of Australia's inward FDI, 1995–96

<i>Economy</i>	<i>Stocks</i>		<i>Flows</i>	
	<i>\$ million</i>	<i>% of total</i>	<i>\$ million</i>	<i>% of total</i>
United States	41 745	28.5	5 456	36.5
United Kingdom	37 422	25.6	3 843	25.7
Japan	17 967	12.3	-569	-3.8
Netherlands	8 071	5.6	258	1.7
New Zealand	4 451	3.0	-1 115	-7.5
Singapore	4 261	2.9	2 467	16.5
Germany	4 188	2.9	485	3.2
Switzerland	3 727	2.5	1 298	8.7
France	2 828	1.9	950	6.4
Canada	2 059	1.4	-537	-3.6
APEC	74 208	50.7	6 309	42.2
ASEAN	5 324	3.6	2 473	16.6
EU	54 886	37.5	5 872	39.3
OECD	125 011	85.3	10 404	69.6
Total	146 490		14 947	

Source: ABS (1997a).

Australia's outward FDI stock is concentrated in the United Kingdom, the United States and New Zealand (Table 2.7). These countries now account for three-quarters of Australia's outward FDI stock, compared with just over 60 per cent 10 years earlier. Hong Kong, Central America and Caribbean (excluding Mexico) and Malaysia are also relatively important destinations for Australia's FDI. However, FDI stock in these economies is small compared with the top three destinations. ASEAN economies accounted for 7 per cent

of Australia's outward FDI stock in 1995–96, higher than in 1985–86, but lower than the early 1990s.

FDI outflows during 1995–96 were directed primarily at the US and UK markets, which received \$3.8 billion and \$3.3 billion in FDI flows from Australia, respectively. Together OECD countries received 85 per cent of Australia's FDI outflows in 1995–96, ten percentage points higher than their share in 1985–86. APEC economies accounted for nearly half of Australia's outflows in 1995–96. While the majority of this was received by the United States, Japan and Hong Kong were also important destinations.

Table 2.7: Major destinations of Australia's outward FDI, 1995–96

<i>Economy</i>	<i>Stocks</i>		<i>Flows</i>	
	<i>\$ million</i>	<i>% of total</i>	<i>\$ million</i>	<i>% of total</i>
United Kingdom	19 275	33.4	3 277	36.3
United States	15 124	26.2	3 753	41.6
New Zealand	8 085	14.0	-180	-2.0
Hong Kong	2 800	4.9	399	4.4
Central America and Caribbean (excl. Mexico)	2 198	3.8	699	7.8
Malaysia	2 111	3.7	109	1.2
Papua New Guinea	1 424	2.5	-314	-3.5
Singapore	1 283	2.2	142	1.6
Netherlands	1 177	2.0	153	1.7
Germany	560	1.0	29	0.3
APEC	32 043	55.5	4 380	48.6
ASEAN	3 909	6.8	360	4.0
EU	22 078	38.3	3 726	41.3
OECD	45 942	79.6	7 687	85.2
Total	57 701		9 021	

Source: ABS (1997a).

2.5 FDI as a mode of service delivery in Australia

FDI is clearly an important and growing part of the Australian economy. However, FDI flows and stocks data do not provide information directly on

the importance of FDI as a mode of service delivery in Australia. To achieve this, the value of domestic sales of foreign affiliates operating in Australia would need to be compared with the value of services imported cross-border and by the temporary movement of people. Unfortunately, Australia does not collect data on FDI sales, although there are a few studies which provide an insight into the relationship between the value of FDI stock and the value of FDI sales.

UNCTAD (1996) estimates that global sales of foreign affiliates reached \$6 trillion in 1993. In the same year, worldwide FDI stock was valued at \$2 trillion. Therefore, in 1993, \$1 of FDI stock produced \$3 in goods and services abroad. Petri (1997) estimates that the total world FDI stock was \$2 trillion in 1992. He also estimates world FDI stock by sector — \$0.5 trillion for primary, \$1 trillion for manufacturing and \$0.5 trillion for services. Petri calculates that world FDI sales were \$3.4 trillion in 1992, comprising \$0.4 trillion for primary, \$2.4 trillion for manufacturing and \$0.5 trillion for services. While Petri's estimate of world FDI sales is substantially less than that estimated by UNCTAD, his results suggest that in total, the value of FDI sales is higher than the value of FDI stock, while for services, the two are of approximately equal magnitude.

The most accurate data on FDI sales are collected by the United States International Trade Commission (USITC), which records sales of foreign affiliates operating in the United States. In 1992, foreign affiliate sales in the US services sector were \$127 billion. In the same year inward FDI stock in the US services sector was \$221 billion. These figures are not directly comparable with those reported by UNCTAD and Petri. The USITC figures record *domestic* sales of foreign affiliates, or FDI imports, rather than *total* sales of foreign affiliates, or FDI output, as estimated by UNCTAD and Petri. However, there is some US evidence which suggests that the difference between foreign affiliates' domestic sales and total sales is small, with most of the output of foreign affiliates being sold in the host country (Markusen 1995). This is likely to be particularly true for services, because the most important reason for establishing affiliates abroad in services is to supply services to the host market.

The USITC value of FDI sales can be compared with cross-border imports to determine the relative importance of FDI as a mode of service delivery in the United States. Table 2.8 shows the value of US FDI stock, FDI sales and cross-border imports for available service industries in 1992. The majority of FDI sales and FDI stocks data is captured in the 'other services' category. For FDI stocks 'other services' is dominated by finance, insurance and other business services. These services are also likely to dominate the 'other

services' category of FDI sales. According to these data, \$1 of FDI stock in the US services sector generated \$0.6 of FDI sales to US nationals in 1992. These data also reveal that FDI was more important as a mode of service delivery in the United States than cross-border trade in 1992. The data for separate service industries show that the relationship between FDI stocks and sales varies greatly. Similarly, the relative importance of cross-border imports and FDI sales varies by individual service industries.

Table 2.8: Inward FDI stock, FDI sales and cross-border imports of services in the United States, 1992 (US\$ billion)

	<i>FDI stocks</i>	<i>FDI sales</i>	<i>Cross-border imports^a</i>
Wholesale and retail trade	68	9	na
Transportation	2 ^b	9	36
Communications	1	7	7 ^c
Other services	150	103	56
Total services	221	127	99

a Cross-border import data are for 1993.

b FDI stocks of transportation services include transport and storage services.

c Cross-border imports of communications services cover only imports of telecommunications services.

Source: USITC (1995) and OECD (1996).

The US ratio of FDI stock to FDI sales in the services sector can be used to approximate the value of FDI service sales in Australia. Applying this ratio to Australia's 1995–96 inward FDI services stock (\$81 billion) gives a value of \$47 billion for Australian-based foreign affiliate sales in the domestic economy. In 1995–96, Australia's cross-border imports of services were \$21 billion, suggesting that FDI sales might have been more than twice as important as a mode of services delivery in Australia as cross-border trade. Even if sales of Australian-based foreign affiliates are overestimated by the US ratio, it is unlikely that sales of Australian-based foreign affiliates in the domestic economy are less than the value of services imported cross-border.

To provide an indication of which foreign supplied services in Australia are most reliant on FDI as a mode of delivery, Table 2.9 compares the value of FDI stock and the value of imports traded cross-border for services for which data are available. The table also presents estimates of Australian-based foreign affiliate sales in the domestic economy, using the US ratio of FDI stocks to FDI sales. With the exception of transport services, FDI appears to be far more important as a mode of service delivery than cross-border imports.

Table 2.9: Australia's inward FDI stock, FDI sales and cross-border imports of services, 1995–96 (\$ million)

	<i>FDI stock</i>	<i>FDI sales^a</i>	<i>Cross-border imports</i>
Transport services	2314 ^b	1331	10038
Construction services	1349	776	28
Finance and insurance services	29582	17010	1172
Property and business services	18865	10847	824
Wholesale trade	16275 ^c	9358	na
Other ^d	12712	7309	na
Total services	81097	46631	21259

a Estimated using US FDI sales/stock ratio of 0.6.

b FDI stock for transport services includes transport and storage services.

c 1994–95.

d Residual.

Source: ABS (1997a; 1997b).

2.6 Conclusions

Studies which examine services trade and its liberalisation generally concentrate on cross-border services trade. However, the nature of services suggests that a commercial presence will often be required when delivering many services internationally. The value of services imported via FDI in the United States is estimated to be 30 per cent higher than the value of US services imported cross-border and by the temporary movement of people. Assuming a similar ratio of FDI stocks to FDI sales to the United States, Australian-based foreign affiliate sales of services might have been twice the value of services imported cross-border in 1995–96. Therefore, when examining the barriers to services trade, it is important to include the barriers to FDI.

The GATS is the first multilateral agreement that recognises the important role of FDI in services trade. Commercial presence is included as one of the four modes of service delivery covered by the Agreement and most commercial presence is by FDI. The next chapter examines the implications of the GATS for FDI in services and, in particular, the commitments that have and have not been made by WTO members to reduce barriers to FDI in services.

3 THE GATS AND FOREIGN DIRECT INVESTMENT

The General Agreement on Trade in Services (GATS) contains a set of commitments and obligations on policies affecting services trade. Establishing a commercial presence in a country, usually through FDI, is one of the four modes of service delivery covered by the GATS. Barriers to FDI in services are therefore covered for the first time in a binding multilateral agreement. However, in practice the impact of the GATS on FDI barriers will be limited, for a range of reasons. For example, most member countries have listed a range of restrictions as 'unbound' or exempt from the market access and national treatment obligations. Many other sectors are simply not listed or scheduled by many countries, and therefore fall outside the scope of the Agreement. To develop a clearer picture of the implications of those FDI barriers not covered by the GATS, and possible gains from further liberalisation, more information is needed on the nature and extent of the existing barriers and how they affect services trade and economies generally.

3.1 Overview of the GATS

As part of the Uruguay Round of global trade negotiations, contracting parties to the General Agreement on Trade and Tariffs (GATT) signed the General Agreement on Trade in Services (GATS). The GATS is the first binding multilateral agreement covering trade in services. The World Trade Organisation (WTO) administers the agreement, which took effect in January 1995.

The GATS consists of:

- a set of general obligations, which apply to all measures affecting trade in services in all WTO member countries;
- the schedules of specific commitments for each country; and
- a list of country-specific exemptions from the most favoured nation (MFN) treatment.

Twelve sectors are covered by the agreement: business services; communications services; construction and related engineering services;

distribution services; educational services; environmental services; financial services; health related and social services; tourism and travel services; recreational, cultural and sporting services; transport services; and others.

Four possible modes of service delivery are defined in the GATS. *Cross-border supply* is where the supplier and consumer are located in different countries, as with overseas telephone services. *Consumption abroad* involves the consumer moving to the foreign supplier, as in tourism or education. *Temporary movement of people* involves the supplier moving temporarily to the consumer, as in consulting services. *Commercial presence* is where the supplier establishes a commercial presence, often through FDI, to deliver the service in a foreign country.

The country schedules specify how each member country intends to apply the market access and national treatment obligations, for each of the four modes of delivery. Market access involves a commitment not to maintain or adopt any of the specified measures which limit the number of service suppliers or the value of their service transactions, impose economic needs tests, restrict the type of legal entity through which a supplier may supply a service, or limit the share of foreign ownership in the value of individual or aggregate investment. The national treatment obligation requires that countries apply no less favourable treatment to foreign suppliers than they apply to domestic.

The country schedules are positive lists, meaning that only those sectors listed are subject to the market access and national treatment rules and disciplines. In contrast, the most favoured nation (MFN) exemptions represent a negative list, with MFN applying unless a specific exemption is recorded.

For those sectors included in its schedule, a country can indicate that it places no restrictions on market access or national treatment, by listing 'none' against the relevant sector and mode. Alternatively, if a country wishes to maintain measures which violate one of the principles, they list specific exemptions or 'unbound' in the relevant column, and these measures are then exempt. Each country's schedule has two sections — the first indicating those commitments and exceptions which apply across all sectors (horizontal), the second indicating those which apply to specific sectors.

In addition to the specific commitments set out in their schedules, each member country is bound to several general obligations and disciplines, covering things such as transparency, disclosure of confidential information, application of domestic regulation, and behaviour of monopolies and exclusive service providers. Some of these are potentially very relevant to FDI barriers.

3.2 Implications for FDI barriers

The GATS could potentially have a significant impact on FDI barriers. The general and specific commitments relate to all four modes of service supply, including commercial presence, which is often through FDI. For example, under the market access principle, the widely used FDI policy of restricting the share of foreign ownership in a sector, or in individual firms within a sector, could not be maintained. Under the national treatment principle, screening of FDI proposals and application of net economic benefits tests or national interest criteria could not be maintained, where they are not equally applied to domestic investment proposals.

However, in practice the impact of the GATS will be limited. Barriers to commercial presence and FDI in many sectors are not covered by the Agreement, because countries have chosen not to include those sectors in their schedule. And for those sectors where some commitments are made, restrictions on market access or national treatment for commercial presence are frequently listed as ‘unbound’ or exempt.

In some sectors, very few countries make any commitment to market access and national treatment. For example, only five out of 122 GATS signatory countries list postal services in their schedule. Other sectors where relatively few countries make commitments include: education (only 16 countries list higher education in their schedule, 17 list secondary); health and related services (only 23 list hospital services, and 8 other human health services); and distribution services (only 29 countries list wholesale and retail trade). In contrast, a relatively high number of countries make commitments in tourism and travel related services.

For the scheduled sectors, restrictions on the commercial presence mode of supply are widespread, particularly in some sectors. For example, of the five countries which make some commitment on postal services, three list some commercial presence restriction which they intend to maintain, in relation to both market access and national treatment. Even in sectors where many countries have made commitments, most list restrictions on commercial presence. For example, in the tourism and travel related services sector, hotel and restaurant services are scheduled by 107 countries. However, these countries list 60 market access or national treatment restrictions that will continue to apply to commercial presence in the hotel and restaurant services industry.

For the commercial presence mode of supply, common restrictions on market access include limits on foreign ownership and authorisations based on whether certain economic, social and cultural criteria are met, particularly for

sensitive sectors such as broadcasting. National treatment violations take a range of forms, including limits on the number of foreign members of company boards and restrictions on the nationality of partners of legal or other professional practices.

The number of scheduled sectors and modes of supply varies widely across countries (Table 3.1). Australia schedules 360 of a possible 620 items for market access (155 sectors and sub-sectors, by four modes of supply, not only commercial presence). The number of commitments made by Australia is well above the average number, although less than the number scheduled by some other developed economies such as Japan (408), the United States (384) and the European Union (392). Australia ranks third in terms of the number of commitments made with no restrictions. In contrast, relatively few commitments are scheduled in some of the economies which are important current and potential destinations for Australian outward FDI. For example, New Zealand schedules 276, Hong Kong 200, Singapore 232 and China 196 (Hoekman 1995).

The share of market access commitments to which no restrictions apply also varies greatly among economies (Table 3.1). Generally, high income economies have a larger share of no restriction commitments than low income economies. However, the share of commitments that have no restrictions ranges from 69 per cent for Austria to 43 per cent for the EU among high income economies, and from 64 per cent for the Philippines to 8 per cent for India among low income economies.

Within the commercial presence mode of supply, Australia has made 92 market access commitments, of which 72 involve no restrictions (see Table 3.2). Australia has also made 92 national treatment commitments, of which 70 have no restrictions, four are unbound and the other 18 have some limitations. Of the remaining 63 sectors and sub-sectors identified in the GATS, Australia does not schedule commitments for either market access or national treatment. Key services not scheduled by Australia include many communications services, primary and adult education and some health and transport services. For its scheduled sectors, Australia lists horizontal restrictions for the commercial presence mode of delivery, with investment proposals across all sectors to be notified and screened in accordance with the foreign investment legislation. In addition, specific restrictions are listed for some sectors, such as banking, where the share of foreign ownership is restricted.

Table 3.1: **GATS market access commitments for selected countries**

<i>Country</i>	<i>Number of commitments out of a possible 620</i>	<i>Number of 'no restriction' commitments</i>	<i>'No restrictions' as a share of total commitments (%)</i>
Australia	360	222	62
Canada	352	186	53
EU	392	169	43
Hong Kong	200	90	45
Japan	408	230	56
New Zealand	276	189	68
Singapore	232	118	51
United States	384	244	64
China	196	42	21
India	132	10	8
Indonesia	140	42	30
Korea	311	134	43
Malaysia	256	100	39
Philippines	160	102	64
Thailand	260	59	23

Source: Hoekman (1995).

Restrictions listed against other modes of service delivery can also affect the scope for, and economic viability of, establishing commercial presence. For example, restrictions on the temporary movement of people can be particularly important, where a firm wants to employ experienced staff from its foreign headquarters to help establish a commercial presence. Most countries place horizontal restrictions on temporary movement of people, with the degree of restriction ranging from visa requirements through to complete bans on foreign persons providing some services.

Table 3.2: **GATS commitments and restrictions on commercial presence for Australia**

<i>Sector and sub-sector</i>	<i>Scheduled</i>				<i>Not scheduled</i>
	<i>Market access restrictions</i>	<i>National treatment restrictions</i>	<i>No market access restrictions</i>	<i>No national treatment restrictions</i>	
Business services	2	2	34	34	10
Communication services	0	0	6	6	18
Construction and related services	0	0	4	4	1
Distribution services	0	0	4	4	1
Educational services	0	3	3	0	2
Environmental services	0	0	3	3	1
Financial services	16	16	0	0	1
Health and related social services	0	0	1	1	3
Tourism and travel related services	0	0	3	3	1
Recreational, cultural, sporting services	0	0	3	3	2
Transport services	2	1	11	12	22
Other services	0	0	0	0	1
Total	20	22	72	70	63

Source: GATS schedules of commitments.

Some of the general obligations and disciplines are also potentially relevant to FDI barriers, although in practice the impact is likely to be very limited. For example, legislated barriers to market entry (applying to both foreign and domestic firms) could be covered under the Monopolies or Exclusive Service Providers obligation (article VIII) or the Domestic Regulation obligation (article VI). However, the scope of these obligations is quite narrow. In relation to monopolies, members are simply required to ‘ensure that the monopolist does not act in a manner inconsistent with the most favoured nation commitment or the specific commitments’. In relation to domestic regulation, the requirement is that ‘in sectors where specific commitments are undertaken, members should ensure that all measures in general application affecting trade in services are administered in a reasonable, objective and impartial manner’. In short, a wide range of barriers to market entry could be

maintained, where they are in sectors which have not been scheduled or where they do not violate the most favoured nation commitment.

3.3 The GATS and investment incentives

Investment incentives also have the potential to distort patterns and levels of FDI, and through it services trade. The widespread use of incentives to attract foreign investment has been widely documented (discussed in the following chapter).

The core GATS principles of market access, national treatment and MFN treatment do not relate directly to FDI incentives. Market access refers to restrictions on modes of supply, including FDI, but does not refer to incentives. Similarly, national treatment refers to measures which provide relatively favourable treatment to domestic service suppliers, but not those which provide relatively favourable treatment or incentives for foreigners. The MFN commitment restricts countries from providing relatively favourable treatment to investors from one or more countries, but does not refer to incentives that are applied equally to all sources of FDI.

Subsidies to any mode of service delivery (including subsidies or incentives to establish commercial presence) are covered in article XV of the GATS, as one of the general obligations. Based on the recognition that ‘in certain circumstances, subsidies may have distortive effects on services trade’, members have agreed to enter into negotiations with a view to developing multilateral disciplines to avoid such effects. However, no clear framework or procedure is established.

3.4 Implications of the FDI barriers not covered in the GATS

The limitations of the GATS reflect a range of economic, political and practical factors. The lack of a clear framework and mechanism for progressive liberalisation reflects the difficulty of measuring and monitoring ongoing liberalisation. The limited scope of the commitments from many countries, and the large number of measures which are exempt, may indicate that members can identify possible costs of reducing barriers, such as loss of national sovereignty or national interest concerns, but are not convinced that there may be significant offsetting gains from reducing barriers to services trade generally, and FDI specifically.

An understanding of the implications of the remaining FDI barriers for services trade could help to progress the development of the GATS, in the

same way that analysis and estimates of the costs of maintaining barriers to goods trade have helped to progress goods trade liberalisation.

To effectively assess these implications, it is necessary to have:

- an inventory of the types of barriers, by sector and country;
- measures of the size or significance of the barriers; and
- a model of the role of FDI in services output, and in the economy generally, to allow the effects of the barriers to be estimated.

Unfortunately, there are significant shortcomings in the information base and analytical tools for addressing each of these needs. These are discussed in the following three chapters.

Estimates of the potential gains from further investment liberalisation are relevant not only for future progress in the GATS, but also for investment liberalisation more broadly. A clearer understanding of the extent of FDI barriers and their impacts on the economy generally, not only as they apply to services trade, should help to progress other broader investment liberalisation initiatives, such as the OECD's proposed multilateral agreement on investment (MAI) and any outcomes from the WTO's work program on investment.

As discussed in the preceding chapter, while services sectors account for around 60 per cent of world flows of FDI and 50 per cent of the stocks, FDI in goods markets is also significant, particularly in some sectors such as manufacturing and mining. For Australia, many of the major inward and outward foreign investment companies are outside the services sector. Major foreign investors in Australia include companies in manufacturing (for example, Toyota, Ford, BTR) and resources (for example, Shell, Mobil, BP). Major outward foreign investors include BHP, Amcor and several service suppliers, such as News Corp, National Australia Bank, and the ANZ Bank. FDI restrictions in non-services sectors are therefore of interest for Australia.

The limited amount of empirical work that has been done on FDI barriers indicates that they are widespread, and that they are likely to have significant impacts, not only on services trade, but more broadly. For example, FDI barriers may reduce the gains from trade liberalisation, by limiting the flexibility of economies to respond to new trading opportunities (see for example Petri 1997a, WTO 1996, OECD 1996a). However, in each of the studies that have identified and analysed FDI barriers (discussed further below), the need for further analysis has been highlighted.

4 BARRIERS TO FOREIGN DIRECT INVESTMENT

Many policy measures are used throughout the world to control or influence FDI. These range from complete bans on foreign ownership in some sectors, through to simple requirements that FDI be registered and screened, with virtually automatic approval. Measures vary in the level at which they are applied — for example, whether they affect market entry, ownership and control, or operations — and also the way in which they are applied — for example, through legislation which clearly specifies ownership limits, or case-by-case assessments of whether entry will be allowed and the conditions that may apply. Some economies also offer investment incentives, often on an ad hoc basis and in conjunction with conditions on the operation of the foreign firm, such as its location and use of local resources. While many economies have liberalised their foreign investment policies in recent years, all still maintain some restrictions, particularly in services sectors such as telecommunications, media, transport and financial services.

4.1 Framework for identifying FDI barriers

What is an FDI barrier?

As a first step in identifying and analysing FDI barriers, it is necessary to define what constitutes a barrier. While investment barriers are widely referred to in policy documents and theoretical and applied economics literature, they are often not defined. For example, the GATS does not define barriers to market access, but instead provides six examples of the types of measures which should be regarded as barriers or restrictions on market access.

A wide range of things could potentially be considered a barrier or impediment to FDI. An investor could interpret as barriers to FDI the broad range of additional difficulties and costs that must be incurred in controlling a business in a foreign country, such as the costs of setting up communication links between the parent and the affiliate, or the costs of monitoring the performance of the business from another country. While these are important

factors influencing investment decisions, they do not constitute barriers as defined for this study.

In this report, an FDI barrier or impediment is any government policy measure which distorts decisions about where to invest and in what form. Therefore, higher costs which are incurred in managing businesses from a distance, or higher market prices for inputs in one economy compared with another, are not barriers to FDI. In contrast, policy measures such as limits on the level of foreign investment, or the need to go through costly and time-consuming screening processes to convince authorities that FDI in a project will be in the national interest, are considered barriers.

Some FDI barriers will apply only to foreign investors (and so violate the national treatment principle of the GATS), while others will also apply to domestic investors. For example, a legislated monopoly in a sector would represent a barrier to market access for both foreign and domestic investors. Similarly, competition policies which involve restrictions on certain trade practices and mergers and acquisitions will affect market entry and operations for both domestic and foreign controlled firms.

Finally, FDI barriers as defined above only include restrictions imposed by governments. In some economies, such as Switzerland, private companies impose limits on foreign holdings of their shares (Stulz and Wasserfallen 1995). While these private measures may influence FDI patterns and levels, they are generally not addressed in investment liberalisation policy agendas, and so are not considered in this study.

Classifying FDI barriers

Barriers to FDI take a wide range of forms across economies — from complete bans on foreign ownership of firms in some sectors, through to simple requirements that the FDI be screened and registered, with virtually automatic approval. Between these two extremes are a range of restrictions on market entry and operations. FDI barriers may be applied to both inward FDI and outward FDI,¹ although barriers to inward FDI are used far more widely than those on outward FDI, and hence are the focus of this report.

There are many possible ways of classifying these barriers. To devise a useful classification framework it is important to consider first why we want to

¹ For example, overseas investments by Chinese enterprises are subject to approval by relevant authorities, outward FDI from Japan requires prior notification and outward FDI from Korea requires either validation or permission, depending on the size of the investment (APEC 1996).

identify and measure FDI barriers. The appropriate classification system may vary, depending on the purpose of the exercise. For example, if the purpose is to check and monitor compliance with some policy commitment, then the categories should reflect the key elements of the commitment. Restrictions on market access and violations of national treatment are therefore sensible classifications in the context of both the GATS and several other important policy initiatives, such as APEC's non-binding investment principles. If the primary interest is instead the resource allocation implications of the barriers, some additional or different information may be useful.

The resource allocation implications of FDI barriers are of primary interest in this study. Barriers to FDI may distort international patterns and modes of services trade. They may also distort allocation of capital between different economies, between foreign and domestic investment, between different sectors, and between portfolio and direct investment. As a result, services may cost more than they need to and assets may not be used in the most productive way. The effects may flow through the economy through a variety of channels, such as higher prices, less consumer choice, lower capital stock and lower productivity.

Ideally, the classification system should provide information which helps to make the task of assessing resource allocation implications easier. It should highlight the key characteristics of the barriers which will determine their size and impact.

Market access and national treatment are clearly relevant categories from a resource allocation perspective. If market access is restricted or foreign and domestic investments are treated differently, decisions about levels and types of investment will be distorted.

However, in practice the distinction between these two types of FDI barriers is often unclear. For example, screening of foreign firms entering a market could be seen as violating both national treatment and market access. To reduce the overlap in the categories, national treatment is generally taken to refer to measures affecting foreign firms after establishment.

A clearer way to classify barriers is therefore to make this difference explicit — that is, classify barriers according to what aspect of the investment they most affect: establishment; ownership and control; or operations.

In addition to these three distinctions, some further information may be useful, to help guide subsequent assessments of the size and impacts of the barriers. Two important distinctions are between:

- direct versus indirect restrictions on foreign controlled firms; and

- rules versus case-by-case decisions.

Direct versus indirect restrictions

Direct restrictions include measures that clearly specify quantity or value constraints on foreign investors' market access or operations. These can be further divided into: direct restrictions on the total size of the investment or its share in a sector; and direct restrictions on the inputs used by the foreign firm, such as local content requirements. (These categories are analogous to output and input restrictions affecting trade.) The FDI restrictions specified under the market access criteria in the GATS (part III article XVII) are mainly direct output type restrictions — on the value of the investment or the services delivered.

Indirect restrictions include those measures which will affect the market access, operations and profitability of the foreign owned firm, but do not apply directly to either the inputs of the firms or the size of its investment. Examples include applications of economic benefits tests or national interest criteria and restrictions on the membership of company boards.

The distinction between direct and indirect measures is of interest for a number of reasons. First, the impacts of the two types of measures are likely to vary. In general, a measure which directly targets a desired outcome, say a restriction on the share of foreign ownership in a sector, will tend to achieve the outcome at a lower cost than a measure which tries to achieve the same objective but in a less direct and transparent way — for example, by imposing various requirements on the foreign investor. Second, the distinction also provides a useful basis for subsequent quantification, in conceptual terms at least. Direct restrictions translate into shifts or changes in the demand for or supply of foreign capital (discussed further in the next chapter). In contrast, indirect restrictions are less transparent and more complex, and difficult to assess because of this.

Finally, the distinction is relevant for policy analysis and development. It is easier to frame rules for removal of barriers if they are in the form of clearly defined direct restrictions on quantities or values. It is also easier to assess progress in liberalisation. For example, in Australia the replacement of the net economic benefits test (whereby foreign investors were required to show that their project would result in net economic benefits) with the rule that proposals be approved unless judged contrary to the national interest in July 1986 (FIRB 1997), was clearly a relaxation of inward FDI restrictions — but to what extent? It is very hard to measure the degree of liberalisation involved. Comparing FDI regimes across economies is also difficult when vague indirect policies are involved. For example, Canada requires investors to demonstrate

that net economic benefits will flow from proposed projects. How much more stringent is this than the approach adopted by Australia and others of approving projects unless they are judged contrary to the national interest?

Rules versus case-by-case judgements

The impact of a barrier also depends, in part, on the way in which it is applied. In general, clearly specified and transparent rules will have a less adverse effect on resource allocation than those measures which involve administrative discretion, and hence a degree of uncertainty for the investor. For example, a legislated 15 per cent limit on foreign ownership of companies in the banking sector is likely to be less costly than a policy which aims to achieve the same broad limits, but via a system of administrative approvals and conditions on the investment. Reliance on a predominantly case-by-case approach to achieve a given level of restrictions is likely to be more costly than a more clearly defined and evenly applied approach.

Most economies use both types of restrictions. In Australia, for example, some foreign ownership limits are clearly specified in legislation, such as the *Broadcasting Services Act* (15 per cent limit on individual foreign equity in a commercial TV network). Other policies are more vague and open to discretion. For international aviation services, foreigners can ‘generally expect’ approval to acquire up to 25 per cent of equity in a carrier other than Qantas, with total foreign ownership of Qantas up to 49 per cent generally allowed, subject to some further ‘national interest’ conditions (FIRB 1997).

4.2 Main types of barriers

As an indication of the vast range of forms that FDI barriers take, UNCTAD lists in its *1996 World Investment Report* a total of 57 different types of FDI barriers: 15 types of restrictions on establishment; 17 types of restrictions on ownership and control; and 25 types of restrictions on operations (UNCTAD 1996). Within each category, measures range from direct restrictions on the level or form of FDI, through to vague requirements which may or may not be binding on particular projects or influence the level of investment or returns to it in any clear way.

The main types of barriers identified by UNCTAD are summarised in Table 4.1. They can be classified further according to whether they involve direct quantity or value restrictions, such as bans or limits on foreign ownership, or indirect restrictions, such as government appointed board members. Many of the barriers listed in Table 4.1 are indirect (for example, screening, restrictions on the legal form of entities, government appointed board members). It is

difficult to classify the barriers into those involving rules and those involving judgement and discretion, in the absence of detailed information about how particular economies apply each type of measure. Specific country policies are discussed in the following section.

Table 4.1: Barriers to FDI

<i>Restrictions on market entry</i>	<p>Bans on foreign investment in certain sectors</p> <p>Quantitative restrictions (eg limit of 25 per cent foreign ownership in a sector)</p> <p>Screening and approval (sometimes involving national interest or net economic benefits tests)</p> <p>Restrictions on the legal form of the foreign entity</p> <p>Minimum capital requirements</p> <p>Conditions on subsequent investment</p> <p>Conditions on location</p> <p>Admission taxes</p>
<i>Ownership and control restrictions</i>	<p>Compulsory joint ventures with domestic investors</p> <p>Limits on the number of foreign board members</p> <p>Government appointed board members</p> <p>Government approval required for certain decisions</p> <p>Restrictions on foreign shareholders' rights</p> <p>Mandatory transfer of some ownership to locals within a specified time (eg 15 years)</p>
<i>Operational restrictions</i>	<p>Performance requirements (eg export requirements)</p> <p>Local content restrictions</p> <p>Restrictions on imports of labour, capital and raw materials</p> <p>Operational permits or licences</p> <p>Ceilings on royalties</p> <p>Restrictions on repatriation of capital and profits</p>

Source: UNCTAD (1996).

However, many of the measures listed in Table 4.1 are likely to involve judgement or case-by-case assessments — for example, the commonly used screening and authorisation processes, and restrictions on the location and

other input decisions for foreign investors. In contrast, restrictions or bans on foreign ownership are often, but not always, specified in legislation.

Some types of barriers are less relevant than others for services sectors. Trade related investment measures (TRIMs), such as requirements that a certain proportion of output be exported, or restrictions on the use of local raw materials, more commonly apply to mining and manufacturing sectors, particularly the automotive, chemical and petrochemical industries (Low and Subramanian 1995). TRIMs tend to be less relevant in service sectors, where the nature of the output means that it is usually predominantly supplied directly to domestic consumers, with little or no output exported.

A detailed review of FDI barriers in APEC economies was undertaken by the Pacific Economic Co-operation Council (PECC) in 1995, in a study commissioned by APEC. PECC uses a few different classifications. In identifying types of FDI impediments, it uses four categories: administrative impediments; market access and national treatment standards; incentives; and operational restrictions. Many types of impediments could be classified into more than one of these categories. For example, a screening process involving judgements on vague criteria such as national interest could be considered an administrative impediment and also a limit on market access and national treatment.

Different categories are used by PECC in the general description of FDI policies by economy, and in their frequency measures of various types of FDI barriers (discussed in the following section).

PECC's country policy description indicates that while most APEC economies have liberalised their foreign investment rules to some extent in recent years, all still maintain some restrictions, particularly in key service sectors such as banking, transport, media, as well as natural resource sectors such as land and fisheries. These most restricted sectors tend to be those considered sensitive on national interest or national security grounds.

4.3 Barriers most commonly used to restrict FDI

Most sources of information on FDI barriers in particular economies are incomplete and vague. For example, the GATS schedules provide a very incomplete picture of barriers to commercial presence in services sectors, because many sectors and measures are not included in the positive lists in the country schedules. APEC's *Guide to Investment Regimes of Member Economies* also provides self-reported outlines of foreign investment regimes, in varying degrees of detail and completeness. Details relevant to the

classification system discussed above, such as whether discretion or rules are involved, are generally not provided. APEC members' Individual Action Plans (published in November 1996) also contain self-reported summaries of current foreign investment regimes.

As APEC economies accounted for 49 per cent of Australia's outward FDI flows in 1995–96, there are a number of studies which have examined the extent to which different types of barriers are used in APEC. Useful summaries are provided in PECC's report (PECC 1995), in the IC's report on firms locating offshore (IC 1996b) and in the BIE report on FDI in APEC (BIE 1995).

PECC presents a table showing whether particular measures are or are not applied in each economy. The degree of restrictiveness of these measures is not taken into account. The measures are: screening or notification; restricted or closed sectors; performance requirements; fiscal incentives; taxation incentives; priority sectors; and exchange controls.

PECC's analysis indicates that the most common impediments are restrictions on foreign ownership in some sectors, which are used in all APEC economies, and screening or notification processes, which are applied in all economies except Hong Kong and the United States. Economies which apply the widest range of restrictions include China, Chinese Taipei, Thailand and PNG.

An analysis of foreign ownership limits, by economy and sector, is presented in the IC's report on firms locating offshore (IC 1996b). Among APEC economies, Korea has the largest number of sectors which are subject to foreign ownership limits. Along with PNG and Chinese Taipei, Korea also has the highest number of sectors that are completely closed to foreign investors. Australia is among the economies with the fewest sectors restricted to foreign investors.

The types of foreign ownership limits vary widely, not only in terms of the share of foreign ownership allowed, but also in the conditions attached. For example, in Malaysia the permitted share of foreign ownership of new manufacturing sector projects depends on the expected degree of export orientation of the project. The higher the proportion of output to be exported, the higher the permitted share of foreign ownership. In some sectors in Indonesia, 100 per cent foreign ownership is allowed subject to the condition that within 15 years some of the shares are sold to domestic investors (APEC 1996).

While not providing an inventory of measures by economy, UNCTAD makes some general comments on the nature and extent of barriers in each category. For example, restrictions on ownership and control are less common now than

in the past, but are still widely applied to services, especially in the context of privatisations, and to natural resource sectors. In contrast, operational restrictions (such as local content or employment requirements) tend to be found across the board and are less sectorally oriented (UNCTAD 1996).

Service sector privatisations in many economies have often involved limits on acquisitions by foreigners. For example, foreign ownership limits have applied in all Canadian privatisations, except rail. In Australia, explicit limits apply in some cases, such as Telstra and Qantas, while others such as State energy utilities have been, or will be, subject to the normal FIRB screening processes when privatised.

The major market entry, ownership and operational restrictions applied to inward FDI in selected APEC economies are summarised in Table 4.2 (at the end of the chapter). Restrictions applying specifically to key service sectors are also listed.

Service sectors tend to be the most heavily restricted sectors in many economies. For example, in Indonesia the six sectors where foreign investment is completely banned are all in services. Further, six of the eight sectors where foreign investment is banned unless it involves some joint venture with Indonesians are in services (the other two are electricity generation and transmission and nuclear power generation, which are not classified as service sectors in the GATS). In Japan, foreigners cannot hold licences to provide telecommunications services, television or radio broadcasting, air transport or maritime transport services (mining is also restricted). Korea is undergoing an extensive liberalisation process, with foreign ownership restrictions being lifted in 152 industries. However, even at the end of the process in January 2000, 29 industries will still be closed to foreign investment. Of these, all but five (in agriculture and fishing) are in the services sectors.

Even among the economies with relatively liberal FDI regimes, some foreign ownership restrictions apply in key services sectors. The United States has no screening or authorisation process and no restrictions in most sectors, but it does restrict foreigners from holding broadcasting, common carrier and aeronautical radio licences (as well as licences to operate atomic energy plants). Similarly, Hong Kong has no screening process, but ownership restrictions apply in broadcasting (APEC 1996).

While no sectors are completely closed to foreign investment in Australia, restrictions in addition to those set out in the *Foreign Acquisitions and Takeovers Act 1975* apply for certain sensitive sectors. With the exception of

real estate, all of these are in services (banking, civil aviation, shipping, broadcasting, newspapers, telecommunications).

In summary, a wide range of FDI restrictions applies to service sectors in APEC economies. While the details vary, some common characteristics seem to be:

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

4.4 Investment incentives

As noted above, the core GATS principles of market access, national treatment and most favoured nation treatment do not apply to investment incentives. There have been some multilateral efforts to limit investment incentives, for example, through the Agreement on Subsidies and Countervailing Measures, signed at the Uruguay Round in 1994. However, the effects of these efforts have been limited (UNCTAD 1996), as governments have tended to be reluctant to extend policy disciplines to investment incentives (WTO 1996).

The reluctance to remove investment incentives reflects the views that they are perceived to be justified on economic grounds and necessary if a country is to compete with others which offer incentives to attract FDI. The possible economic justification is that FDI may generate spillover benefits for an economy, say through the transfer of technology or training of labour. However, the limited empirical evidence on the existence of such effects is mixed (Blomström and Kokko 1997). Further, even if they do exist, it is unlikely that governments would have the necessary information to judge which projects would generate positive spillovers and what subsidy may be justified (WTO 1996). The process of seeking this information makes governments prone to capture by special interest groups.

The other commonly used argument for incentives is that other economies use them, and those that do not offer incentives will miss out (Commonwealth of Australia 1997, Economist Intelligence Unit Australia 1996). One response to the fact that some economies use incentives would be to pursue their multilateral removal. However, as noted above, many governments seem reluctant to do this, and instead adopt the strategy of offering their own incentives. This can result in costly bidding wars, with funds transferred from taxpayers to foreign investors, with no conclusive evidence that the incentives are actually the deciding factor for profitable investment decisions anyway.

Evidence on the extent to which investment incentives affect resource allocation in practice is mixed, although most studies do conclude that the effects are likely to be small. The United Nations Centre for Transnational Corporations undertook a detailed review of empirical evidence on the determinants of FDI, and found that incentives were generally of minor importance, although there was some evidence that they could influence location decisions (UNCTC 1992). Results from the BIE survey of the determinants of outward FDI by Australian firms also indicate that incentives offered by host governments were of limited importance (BIE 1995). Several participants in the Industry Commission's firms locating offshore inquiry also commented that incentives essentially provide 'icing on the cake' (IC 1996b).

However, incentives are widely used, suggesting that host governments consider them to be important. For example, UNCTAD identifies 25 types of incentives, in three broad categories: 13 types of fiscal incentives; 6 types of financial incentives; and 6 other types, such as preferential government contracts and subsidised infrastructure (UNCTAD 1996).

In terms of the categories discussed above for FDI barriers, many investment incentives tend to relate to the establishment of the foreign enterprises, rather than ownership or ongoing operation. Compared with barriers, incentives seem to affect directly the value of the investment or inputs used. For example, widely used incentives include tax breaks and input subsidies. However, these direct measures are often applied on an ad hoc basis, as part of the negotiations for specific projects. Furthermore, in many economies incentives are granted mostly by non-federal government bodies — for example, the States in Australia and the United States, the provinces in Canada and the Länder in Germany (OECD 1996a).

The way in which incentives are applied has implications for their impact. For example, where they are applied on an ad hoc basis by different government authorities within a country, bidding wars can develop. These can waste resources and encourage investments that may otherwise be unprofitable. Furthermore, incentives are often awarded with some conditions attached.

They may be used in conjunction with some restrictions on the mix of local and imported resources, such as labour, used. The combined effect of an incentive and a restriction may be even more costly than the two used separately.

A summary of the major FDI incentives used by selected APEC economies is provided in Table 4.3.

Table 4.3: Major FDI incentives used in selected APEC economies

<i>Economy</i>	<i>FDI incentives</i>
Australia	Most State and Territory governments offer incentives to encourage new investments by both domestic and foreign investors. In addition to arranging meetings and negotiating with other government authorities, most State and Territory governments offer financial assistance in the following areas: rent free periods of accommodation assistance; exemption from payroll tax, stamp duty and municipal rates; plant and equipment removal costs; infrastructure development costs; key personnel removal costs; business plan and feasibility study costs; skills training; and technology development.
Canada	A number of Federal Government incentive programs are available to Canadian and non-Canadian businesses. There are no specific Federal incentives provided to foreign investors.
China	China offers many tax incentives to foreign investors at both the federal and province level. These include: income tax exemptions and reductions in the first 5 years of operation; preferential tax rates for foreign enterprises established in China's open coastal economic areas; exemptions from import duties and value-added tax for machinery equipment and components imported for manufacturing products sold abroad; and exemptions from export duties for products produced by the foreign funded enterprise for export.
Indonesia	Incentives are offered to both domestic and foreign investors and include exemption from import duty and levies on capital goods and raw materials. Some incentives are also provided specifically for exporting manufacturers including drawback of import duty and import surcharge on the importation of goods and materials needed to manufacture the exported finished products.
Japan	The Japan Investment Council offers a number of foreign investment programs aimed at promoting and supporting inward foreign investment. A tax incentive in the form of an extended carry-over period for operating losses is offered to foreign investors only as well as loan guarantees, loans and assistance for the provision of specific facilities such as for training employees and for conferences. Low interest loans are also offered to high technology investors by the Japan Development Bank.

Table 4.3: **Major FDI incentives used in selected APEC economies**

<i>Economy</i>	<i>FDI incentives</i>
Korea	For foreign businesses accompanied by highly advanced technology and those located in certain economic zones a range of tax exemptions and reductions are available. These include exemptions or reductions of income tax, corporate tax, acquisition tax, property tax, land tax and custom duty for foreign invested companies and exemption or reduction of income tax and corporate tax on dividend profits for foreign investors.
Malaysia	A wide range of incentives are available for inward investment in certain sectors. For example, tax exemptions and reductions are available for foreign investment in promoted sectors, reduced tax rates apply for regional headquarters, companies which provide R&D services are eligible for full tax exemption of profits for 5 years and tariff protection can be granted based on the degree of utilisation of domestic raw material, level of local value added and level of technology of the industry. Incentives are also linked to the level of local content.
New Zealand	The New Zealand Government promotes foreign investment by providing information on business sectors in New Zealand, investment procedures and a catalogue of investment opportunities. Assistance is also provided to small and medium sized enterprises in the form of information, skills and a grant scheme. Grants are also available to both domestic and foreign investors to plant forests in certain geographical areas.
Philippines	Foreign investment incentives in the Philippines include income tax exemptions, tax credits on capital equipment, deduction from taxable income for labour expenses and exemption from wharfage dues and export tax, duty and fees. Additional incentives are available for foreign investment in special economic zones.
Singapore	In Singapore, incentives are used for both the promotion of new investments and for encouraging existing companies to upgrade their production processes and introduce new products and services. Major tax incentives include an exemption of corporate tax on profits for up to 10 years, exemption of taxable income, full or partial exemption of withholding tax on interest payments and double deduction of qualifying R&D expenses against income. Grants are also offered for initiatives in new technology.
United States	At the State level, a range of incentives are offered on a national treatment basis including tax abatements, exemptions and credits for land, grants, below-market rate loans, loan guarantees, training and employment assistance, infrastructure, site improvements and land grants.

Sources: APEC (1996), Individual Action Plans for APEC members (November 1996) and IC (1996c).

4.5 Conclusions

While it is clear that all APEC, OECD and WTO members apply some policies which distort inward FDI in their services sectors, the wide variety of measures used makes it very difficult to compare regimes and establish a basis for assessing their impacts. The information that is available is generally self-

reported and often not very detailed (although more seems to be available for APEC economies than others).

The best way to develop an information base would be through an ongoing independent review process. An independent process is perhaps even more important for FDI regimes than it is for trade policy regimes, for which the WTO has in place the Trade Policy Review mechanism. The often discretionary and indirect nature of FDI impediments and the fact that they are not expressed in clear quantitative terms, means that independent information and assessment is particularly important. An independent reporting process, providing comparable information on the types of characteristics listed in the classification system suggested in this chapter, would provide a much clearer foundation for policy assessments and development.

Table 4.2: Inward FDI restrictions, by economy, sector and type

<i>Economy</i>	<i>Notification or screening</i>	<i>Ownership restrictions</i>	<i>Management and operational restrictions</i>
Australia			
General	Yes, above certain thresholds. Usually approved unless contrary to the national interest. Some State level restrictions also apply.	Yes, in specified sensitive sectors (see below).	At least two directors of a public company must be Australian residents. At least one equity partner in certain professional practices, such as legal and accounting, must be an Australian resident. Some operational restrictions may apply to specific projects, as an outcome of the approvals process.
Telecommunications	Yes.	Foreigners are allowed to purchase up to 35 per cent of the one third of Telstra that is to be privatised, while foreign investment in Optus and new suppliers is subject to the general screening and approval process.	General restrictions as above, plus any others specified as part of the screening and approval process.
Banking	Yes.	Foreign ownership limits for the four major banks are determined on a case-by-case basis with large scale transfer of ownership to foreigners considered contrary to the national interest. Purchase of other banks and establishment of new foreign banks is subject to the general screening process and Reserve Bank approval.	General restrictions as above, plus prudential controls.
Broadcasting	Yes.	For commercial TV, maximum foreign ownership is 15 per cent for individuals and 20 per cent in aggregate, and for pay TV the maximum is 20 per cent. Cross media ownership restrictions apply.	No more than 20 per cent of directors of a commercial TV network can be foreigners.

Inward FDI restrictions, by economy, sector and type (continued)

SERVICES TRADE AND FOREIGN DIRECT INVESTMENT

	<i>Notification or screening</i>	<i>Ownership restrictions</i>	<i>Management and operational restrictions</i>
<i>Australia continued</i>			
Civil aviation	Yes.	Foreign ownership limits of 25 per cent for individuals and 35 per cent in aggregate apply to international carriers other than Qantas. For Qantas, foreign individuals can acquire up to 25 per cent, foreigners in aggregate up to 49 per cent. For domestic carriers, the usual limit is 25 per cent for foreign individuals, 40 per cent for foreigners in aggregate, but all proposals are assessed on a case-by-case basis. Up to 100 per cent foreign ownership allowed if the investor is not a foreign airline currently supplying services to Australia.	General restrictions above, others as specified in approval process. For Qantas, a number of national interest conditions must be satisfied, including limits on board membership and plant location.
Other transport	Yes, if the value is above certain thresholds.	Licences required for foreign vessels to operate coastal shipping services. Other restrictions may be specified in the approval process.	Only if specified in the approval process.
<i>Canada</i>			
General	Yes, notification required. Reviews also required in limited circumstances. In the reviews a net economic benefit for Canada must be established for approval. Some provincial laws apply.	Yes, in specified sectors.	The simple majority of the board of directors, or of a committee thereof, of a federally-incorporated corporation must be resident Canadians.
	<i>Notification or screening</i>	<i>Ownership restrictions</i>	<i>Management and operational restrictions</i>

4 BARRIERS TO FOREIGN DIRECT INVESTMENT

Canada continued

Telecommunications	Yes.	Canadian telecommunications carriers restrict foreign ownership to 20 per cent. There are no ownership restrictions on resale of services.	Only the general restrictions above.
Banking	Yes.	No one person (Canadian or foreign) may own more than 10 per cent of any class of shares of a Schedule I Bank.	Foreign banks must incorporate subsidiaries in Canada to undertake the business of banking.
Broadcasting	Yes.	Foreign ownership of any given broadcasting license or cable operation is limited to a maximum of 20 per cent.	Users of radio spectrum are required to obtain a licence. For individuals the criteria for eligibility is Canadian citizenship or permanent residence. In the case of corporations eligibility is based on Canadian residence, ownership or control.
Civil Aviation	Yes.	Licences to operate commercial air services in Canada must be held by a Canadian citizen, permanent resident or an entity that is controlled by Canadians with at least 75 per cent of voting interests owned and controlled by Canadians.	A person who proposes to operate a commercial air service to and from Canada must hold an operating certificate and licence equivalent to a Canadian licence.
Other transport	Yes.	No in the maritime sector. None listed for other transport.	The transportation of cargo and passengers between Canadian points as well as all other commercial marine activities in Canadian water are reserved for Canadian flag ships.

SERVICES TRADE AND FOREIGN DIRECT INVESTMENT

	<i>Notification or screening</i>	<i>Ownership restrictions</i>	<i>Management and operational restrictions</i>
<i>China</i>			
General	Yes, the establishment of a wholly foreign owned enterprise must be beneficial to the development of the national economy.	The proportion of the foreign joint venturer's investment in an equity joint venture shall be, in general, no more than 25 per cent of the registered capital of the equity joint venture.	The project must either use advanced technologies and equipment or a large proportion of its production must be exported. Local content requirements apply for some industries.
Telecommunications	Not applicable.	No establishment of foreign capital enterprises permitted.	Not applicable.
Banking	Yes.	Resident representative offices must be approved by the People's Bank of China. A range of foreign financial institutions are permitted to supply services in China, but only in certain regions.	Activities of representative offices are limited. There are a range of requirements for registered capital and operating funds.
Broadcasting	Not applicable.	No establishment of foreign capital enterprises permitted.	Not applicable.
Civil Aviation	Yes.	Foreign investment proportion must be less than 35 per cent of total.	None listed.
Other transport	Yes.	For sea transport, foreign investment proportion must be less than 49 per cent of total.	None listed.

4 BARRIERS TO FOREIGN DIRECT INVESTMENT

	<i>Notification or screening</i>	<i>Ownership restrictions</i>	<i>Management and operational restrictions</i>
<i>Hong Kong</i>			
General	No.	Only in broadcasting.	Only in broadcasting and banking.
Telecommunications	No.	No.	Limitation on the number of fixed network and mobile licences.
Banking	Yes.	No.	Prudential controls (tighter than those for local banks), restrictions on branch operations (eg limits on the number of offices that a foreign branch or representative office may have).
Broadcasting	Yes.	No for TV, yes for radio (49 per cent max).	Restrictions on voting rights of foreign shareholders.
Civil aviation	No.	No.	No.
Other transport	No.	No.	No.
<i>Indonesia</i>			
General	Yes.	Foreign ownership is banned in some sectors and limited in others. Some requirements for eventual transfer of ownership to locals.	Local content and other restrictions apply to certain projects.
Telecommunications	Yes.	FDI in basic telecommunications services should cooperate with state-owned company in the form of joint venture or joint operation or management contract.	Higher paid up capital is required for foreign service suppliers than of domestic service suppliers.
Banking	Yes.	None listed.	Higher paid up capital is required for foreign service suppliers than for domestic service suppliers.
Broadcasting	Not applicable.	FDI prohibited.	Not applicable.
Civil aviation	Yes.	FDI in airlines should be in the form a joint venture	None listed.

SERVICES TRADE AND FOREIGN DIRECT INVESTMENT

in which at least 5 per cent of shares should be owned by an Indonesian partner.

4 BARRIERS TO FOREIGN DIRECT INVESTMENT

	<i>Notification or screening</i>	<i>Ownership restrictions</i>	<i>Management and operational restrictions</i>
Indonesia <i>continued</i>			
Other transport	Yes.	Taxi, bus and local shipping services are reserved for domestic enterprises. FDI in other shipping and public railways is permitted if in the form a joint venture with minimum shareholdings by an Indonesian partner.	Shipping operators must own at least one ship with a specified minimum weight.
Japan			
General	Yes.	Foreign control banned in some sectors.	Ex-post report required for all FDI and prior notification required for some sectors.
Telecommunications	Yes.	Foreigners cannot hold licenses, and may hold a maximum of 20 per cent of the shares in the two major telecom companies.	None listed.
Banking	Yes.	No.	The establishment of branches or subsidiaries of foreign banks requires authorisation and is subject to reciprocity considerations under certain conditions.
Broadcasting	Not applicable.	Foreigners cannot hold licences.	Not applicable.
Civil aviation	Not applicable.	Foreigners cannot hold licences to operate air transport businesses.	Not applicable.
Other transport	Yes.	FDI in maritime transport requires prior notification. Foreign ownership of Japanese ships can only occur through an enterprise incorporated in Japan in accordance with Ship Law. None listed for other transport.	Only Japanese ships can provide maritime transport services between Japanese ports.

SERVICES TRADE AND FOREIGN DIRECT INVESTMENT

	<i>Notification or screening</i>	<i>Ownership restrictions</i>	<i>Management and operational restrictions</i>
<i>Korea</i>			
General	Yes.	Mergers and acquisitions by a foreign invested enterprise of a domestic company are not allowed.	None listed.
Telecommunications	Yes.	Yes, limits decided as part of the approval process.	None listed.
Banking	Yes.	Only representative offices or branches of foreign banks are permitted. Branches may only be established after one year has passed following the establishment of a representative office.	Restrictions on loans, deposits, foreign exchange services and other activities.
Broadcasting	Not applicable.	No foreign ownership allowed.	Not applicable.
Civil Aviation	Yes.	Foreign equity restricted to 20 per cent.	None listed.
Other transport	Yes.	Railway and domestic freight transport are partially liberalised with foreign equity restrictions applying.	Freight shipping licences are only granted to international shipping companies.
<i>Malaysia</i>			
General	Yes.	In specified sectors. Limits linked to degree of export orientation. Joint ventures required in some sectors. Usual merger guidelines also apply.	In specified sectors.
Telecommunications	Yes.	FDI in data and transmission services, mobile data services, telex and telegraph services require joint venture equity and foreign equity limitations apply. Basic telecommunications services are not scheduled in the GATS.	Simple resale of data and transmission services is not permitted.

4 BARRIERS TO FOREIGN DIRECT INVESTMENT

	<i>Notification or screening</i>	<i>Ownership restrictions</i>	<i>Management and operational restrictions</i>
<i>Malaysia continued</i>			
Banking	Yes.	Foreign shareholdings in commercial banks are not to exceed 30 per cent.	An institution owned or controlled by a foreign government or agency of such a government is not allowed to control a commercial or merchant bank in Malaysia.
Broadcasting	Yes.	Unbound commitments made in GATS schedules.	Unbound commitments made in GATS schedules.
Civil aviation	Yes.	None listed.	None listed.
Other transport	Yes.	Most transport services are not scheduled in the GATS. Joint-venture equity with foreign shareholding limitation of 30 per cent in international maritime transport.	Conditions apply to register a vessel in Malaysia. For example, owner of the vessel must be a Malaysian citizen or corporation incorporated in Malaysia.
<i>New Zealand</i>			
General	Yes, above certain thresholds. Criteria for assessments is set out in the Overseas Investment Regulations 1995, and includes things such as demonstrated financial commitment to the investment. More stringent conditions must be met for investment in land.	Usually only in specified sensitive sectors (see below).	Foreign companies must comply with certain financial reporting standards which do not apply to domestic investors.

SERVICES TRADE AND FOREIGN DIRECT INVESTMENT

	<i>Notification or screening</i>	<i>Ownership restrictions</i>	<i>Management and operational restrictions</i>
<i>NZ continued</i>			
Telecommunications	Yes.	No single foreign investor can hold more than 49 per cent of the shares in Telecom Corporation of NZ, without government approval. No specified aggregate foreign ownership limits.	Half the Telecom NZ board members must be New Zealand nationals.
Banking	Yes.	No, unless specified in the approval process.	No, unless specified in the approval process.
Broadcasting	Yes.	No, unless specified in the approval process.	Only if specified as part of the screening and approval process.
Civil aviation	Yes.	No for domestic services. For international services, up to 49 per cent aggregate foreign ownership, provided no more than 35 per cent is by foreign owned airlines, and no more than 25 per cent is by a single foreign owned airline.	None listed.
Other transport	Yes, if value is above certain thresholds.	None listed.	As specified in the approval process.
<i>Papua New Guinea</i>			
General	Yes, criteria for approval of FDI include provision of new services, improvement of productive structure of the economy and implications for employment in PNG.	List of activities reserved for domestic investors is being phased out.	Foreign employers are required to provide on-the-job training to local employees. The use of locally available materials is encouraged.

4 BARRIERS TO FOREIGN DIRECT INVESTMENT

Management and operational restrictions

Ownership restrictions

Notification or screening

PNG continued

Telecommunications	Yes.	None listed.	None listed.
Banking	Yes.	None listed.	None listed.
Broadcasting	Yes.	None listed.	None listed.
Civil Aviation	Yes.	None listed.	None listed.
Other transport	Yes.	Only maritime transport scheduled in GATS. None for maritime passenger and freight.	None listed.

Singapore

General Yes, all new businesses must be registered. Only for newspapers and some telecommunications. Special licences required in some manufacturing industries.

Telecommunications Yes. Foreign shareholding up to a maximum of 49 per cent allowed in wire based and radio based services. No.

Banking Yes. No.

Broadcasting Yes. No.

Civil Aviation Yes. No.

Other transport Yes. None listed. None for maritime transport.

United States

General No, but projects can be blocked on national security grounds. Some State Yes, in specified sectors (see below). There are restrictions on the nationality of management in certain sectors (see below).

SERVICES TRADE AND FOREIGN DIRECT INVESTMENT

restrictions apply.

4 BARRIERS TO FOREIGN DIRECT INVESTMENT

	<i>Notification or screening</i>	<i>Ownership restrictions</i>	<i>Management and operational restrictions</i>
US continued			
Telecommunications	Yes.	Foreigners cannot hold licenses.	There are restrictions on nationality of management for broadcasting companies and telephone companies having a common carrier licence.
Banking	No.	No.	The majority of directors of an affiliate or subsidiary of a foreign bank must be citizens. Reciprocity provisions also apply. Foreign banks are required to register to engage in securities advisory and investment management services. The registration requirement involves record maintenance, inspections, submission of reports and payment of a fee.
Broadcasting	Yes.	Radio and TV licences cannot be held by companies which have greater than 25 per cent foreign ownership. Some cross media ownership restrictions also apply.	There are restrictions on nationality of management for broadcasting companies and telephone companies having a common carrier licence.
Civil aviation	No.	No.	No.
Other transport	No.	The Merchant Marine Act reserves cabotage traffic for ships that are registered and built in the United States, and that are owned and crewed, predominantly by US citizens.	See ownership restrictions.

Sources: APEC (1996), GATS country schedules, Individual Action Plans for APEC members, FIRB (1997) and Francois, Arce, Reinert and Flynn (1996).

Note: 'None listed' means none listed in APEC 1996 or the country's Individual Action Plan or its schedule of commitments in the GATS.

5 QUANTIFYING BARRIERS TO FOREIGN DIRECT INVESTMENT

A simple measure of the price or rate of return impact of FDI barriers would be very useful for comparing various FDI policy regimes and modelling their impacts. However, there are a range of conceptual and practical difficulties in estimating tariff equivalents for FDI barriers. The wide variety of forms of restrictions and their often vague or case-by-case nature complicates the task. Even for relatively direct types of restrictions such as limits on the share of foreign ownership, the analysis is complicated in practice, with different limits often applying to different firms in a sector, to different types of foreign investors, and to individual and aggregate foreign investment.

As with non-tariff barriers to goods and services trade, there are various ways of summarising the extent of FDI barriers — such as simple counts of the number of restrictions in a sector or economy or measures of the proportion of investment covered by barriers. These can potentially be improved, by taking account of the different types of FDI restrictions and their likely economic impact.

5.1 Lessons from quantifying tariff and non-tariff barriers

Tariff rates and tariff equivalents (for non-tariff barriers such as quotas) provide useful measures of the relative size of trade barriers in various economies. These simple measures are also a vital input into assessments of the general equilibrium effects of trade barriers. The estimated price distortion associated with the trade barrier drives the resource allocation effects throughout the economy. Ideally, analogous measures which are useful for country comparisons and for general equilibrium modelling would be calculated for FDI barriers.

There is an extensive literature on options for quantifying non-tariff barriers and the difficulties and limitations of various techniques (see for example Deardorff and Stern 1997, IC 1995a, Leamer 1988). This provides some useful insights for the analysis of FDI barriers.

A key message from the non-tariff barrier literature is that it will not always be possible to characterise a barrier with a single price wedge, tariff equivalent or

implicit tariff. Alternatives often have to be used. For example, estimates of the quantity impact of non-tariff barriers can be derived from econometric models of the determinants of trade (eg Deardorff and Stern 1997, Leamer 1988, Saxonhouse and Stern 1989). Differences between observed trade flows and those predicted by the model are assumed to be due to the non-tariff barriers. Other possible measures of non-tariff barriers include coverage ratios (the proportion of trade covered by barriers) or frequency measures (the number of barriers in each sector) (see PECC 1995) and indices of various types (see Hoekman 1995).

While providing some useful information, each of these measures has significant shortcomings relative to price wedge, or tariff equivalent, measures. For example, the model-derived quantity impact measures are based on the often implausible assumption that non-tariff barriers account for all observed divergences from predicted trade flows. Further, it is difficult to specify acceptable models of trade flows, particularly at the level of disaggregation required to analyse barriers (and deriving models for the determinants of FDI is even more difficult). Attributing all differences between predicted and actual trade flows to the influence of trade barriers means that the poorer the explanatory power of the model, the higher the estimated barriers. The coverage and frequency measures provide some indication of the extent of restrictions, but in contrast to price or quantity measures, they do not provide a clear basis for assessing the resource allocation implications of non-tariff barriers.

Quantification of FDI barriers raises similar difficulties to non-tariff barriers, plus more. The fact that no acceptable measure — theoretical or practical — of FDI barriers has been developed, despite the clear need, reflects the difficulties involved. These difficulties are illustrated in the examples in the following section. After using the examples to assess the possibilities for identifying tariff equivalents for FDI barriers, some alternative measures or indicators are then considered.

5.2 Tariff equivalents for FDI barriers

Restrictions on foreign ownership in a sector

Restrictions on foreign ownership are applied in selected sectors by all APEC and WTO member economies. In some cases, no foreign investment is allowed in certain sectors, while in others foreigners may own up to some maximum share of equity in firms within a sector.

These types of restrictions are similar in many ways to quotas on imports of goods. They therefore provide a useful starting point for assessing the extent to which the techniques used in assessing goods trade barriers can be applied to calculating tariff equivalent type measures for FDI barriers. Operational and other restrictions are examined in the next section.

In general, a restriction on the supply of imports (of goods or capital) will lead to some price adjustment to ration the limited supply, and some switching to the next best alternative product or asset — usually a domestically produced good or capital from domestic investors.

Where the FDI is being undertaken to gain access to service markets in a country, the next best alternative may be some other mode of supply, such as delivering financial services via the internet or sending professional staff temporarily to the country to provide services to clients, without the firm investing directly. In some cases, the next best alternative to the supply of services via foreign investment may be supply using domestic resources.

The quantity restriction on imports translates into some increase in prices or rates of return. Assuming the next best alternative is a very close substitute for the restricted product or asset, the wedge that is driven between the restricted and unrestricted prices or returns measures the tariff equivalent of the quota. The size of the wedge depends on the nature of supply and demand in the restricted market. In Box 5.1, this is illustrated for the case of a restriction on the supply of foreign capital, where domestic capital is a perfect substitute for the restricted foreign capital. The restriction results in an increase in the rate of return, a reduction in total capital flows and an increase in the share of domestic capital in the total.

If the next best alternative to services delivered via FDI is services delivered by some other mode, the simple partial equilibrium model in Box 5.1 can be re-interpreted in terms of a services market, rather than a capital market. The demand would be for services, while supply would be via FDI or an alternative mode. The restriction would increase the price of services, and increase the share of the alternative (and more costly) mode of supply in total service supply.

Box 5.1: The impact of a limit on the share of foreign ownership

To illustrate the effects of a limit on the supply of foreign capital, assume that the demand for capital in the sector is a declining function of the rate of return (see D_1 figure below), and the domestic supply of capital increases with increases in the rate of return. Domestic suppliers of capital to the sector need to be offered higher returns to divert more capital to the sector, to offset any additional risks they may take by

reducing their portfolio diversification. Because the domestic economy is small, foreign capital supply is assumed to be perfectly elastic — any amount is available at the world market rate of return.

If there were no restrictions on foreign capital, it would meet demand beyond Q_d , up to Q_t . Domestic capital can be supplied at below the world rate of return up to Q_d , but beyond that the foreign capital meets all demand as it is cheaper.

However, now say there is a 25 per cent limit on the share of foreign capital in the market. This effectively places a limit on the amount of foreign capital that can be supplied beyond Q_d . For an increase in foreign capital by one unit, 3 additional units of domestic capital must be used. Three quarters of any increase in capital must be met from the domestic market.

The demand curve for domestic capital can therefore be derived (D_2 in the figure below). Domestic demand is three quarters of total demand, at each price. The domestic demand curve has a slope of $4/3$ of the total demand curve. The level of domestic capital supply is set where the domestic demand and supply curves intersect (Q_{dr}), and imports then meet the additional demand (up to Q_{tr}).

With the restriction in place, the rate of return increases, less capital is used, but more of it comes from domestic sources. A measure of the size of the investment barrier is the implicit tariff, which is given by the difference between the actual rate of return in the restricted sector (R_r) and the return on the world market (R_w).

The quota effectively results in a tax on those using capital (area $R_r b d R_w$), part of which is transferred to the domestic suppliers of capital, who are able to earn higher returns (area $R_r a c R_w$) because of the restricted competition from foreign investors.

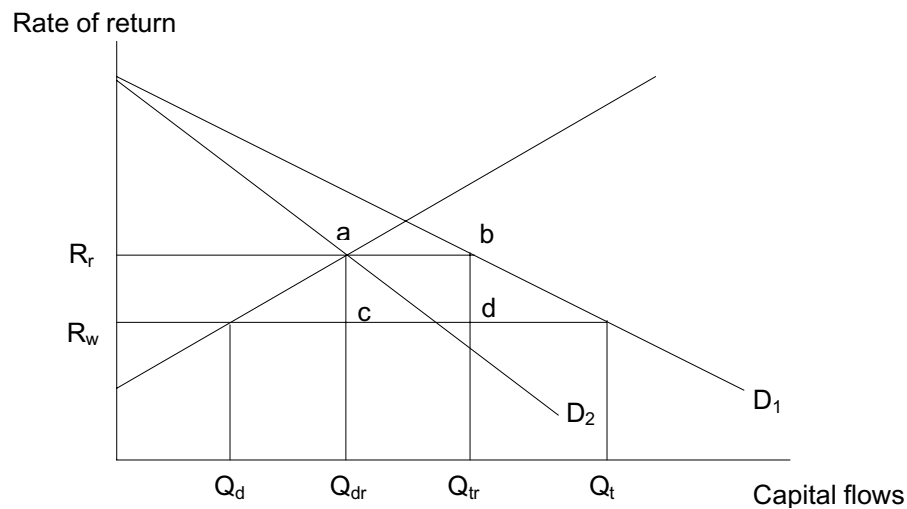
The impact of the foreign investment restriction on returns to the foreign investors depends on how the restricted access is allocated. They may be able to earn above the world market rate of return, if they are granted free access and are able to capture all or part of the surplus or quota rent (area $abcd$).

Box 5.1 continued

However, if the rights to supply the 25 per cent are auctioned by the government, it then captures the quota rent and the foreign investors still only receive the world rate of return. (Also note that if the rights are auctioned, the unit revenues generated provide a useful measure of the tariff equivalent (IC 1995a)). If access is allocated through a screening process, most of the rent may be wasted or spent on lobbying efforts.

In the case shown in the figure below, foreign investors will not face lower returns as a result of the restriction on their access. They would not accept lower returns when they could readily switch to the next best market which offered the world market

return. However, if foreign capital supply was an increasing function of the rate of return (that is, if they needed to be offered higher returns to attract them to invest more in the foreign sector, say to offset the additional risks of reducing their portfolio diversification), and if they were unable to share in the rents created by the restriction, then foreign suppliers may face lower returns as a result of the quota. That is, they may bear part of the tax equivalent of the restriction on foreign capital.



Moving beyond the simple model to a practical tariff equivalent measure can be difficult. For example, what rates of return or service prices should be compared, and can all the differences be attributed to the effects of the investment restriction? It is likely that observed price or rate of return wedges will reflect factors other than FDI restrictions. For example, differences in rates of return in the telecommunications sector in Australia or New Zealand, where foreign investment is restricted, and the United Kingdom, where it is not restricted, could be due to a range of factors, including different regulatory regimes in telecommunications. Observed differences in rates of return could not be attributed fully to the different foreign investment policies. Removing the FDI barriers may not eliminate the wedge. The wedge may also remain if the domestic and foreign capital are not perfect substitutes, although it would be reduced by removal of the barrier.

A further issue is that, in contrast to a tariff rate, the tariff equivalent of a quantitative restriction varies with supply and demand. Differences in tariff equivalents cannot be interpreted necessarily as evidence of tighter restrictions. A given restriction on the level or share of imported capital would imply different tariff equivalents in two countries if the elasticity of demand for capital was different. In the country with the relatively elastic demand, the

tariff equivalent for a given restriction would be smaller. Similarly, the tariff equivalent will change over time if supply and demand change. Therefore, if the aim is to measure changes in the extent of barriers over time or the relative size of barriers across countries, the tariff equivalent of a quantitative restriction may not be very useful.

A range of additional issues arise when the simple model is applied to FDI specifically.

Relevance to FDI

The above analysis is based on a very simple representation of capital (or services) markets. There is demand for capital (or services) in the domestic market, and this can be met from one of two sources. The two sources are perfect substitutes, so that domestic capital (or services via some mode other than FDI) can meet any demand not satisfied by restricted foreign capital.

However, FDI often involves transfer of firm-specific assets, such as human capital, technology, and international reputation. It is these assets which give the international firm an advantage over domestic firms, making FDI profitable despite the additional costs that must be incurred in managing affiliates in different countries.

In the services sector in particular, the FDI may be driven by the desire to establish a commercial presence in a market, where it is the most technically feasible and profitable way to supply a service. Furthermore, service suppliers often compete on non-price terms, with FDI in a range of countries giving them some competitive advantage over purely domestic firms. For example, American Express may be able to differentiate its products and services from others because of the international facilities it offers, and remain competitive even if it does not offer the lowest prices.

Given these economic factors driving FDI, it does not seem sensible to model it as something that can substitute closely for domestic capital to meet total demand for capital in a sector.

The basic concepts illustrated in Box 5.1 are still relevant, however, as they show that the quantity restriction translates into some equivalent price or rate of return distortion, and the size of the distortion depends on supply and demand in the relevant market. But the difficult parts in assessing FDI barriers are deciding the appropriate market in which to conduct a partial analysis, and deciding how much of any observable price wedge reflects the restriction (as opposed to the less than perfect substitutability), before proceeding to trace the effects through the economy. Some examples help to illustrate the difficulties.

Case 1: Foreign investment in a new enterprise

Say a foreign financial institution wants to enter the Australian market to start supplying a range of financial services. It decides to establish a new enterprise, to give it a commercial presence and direct access to customers and other players in the market. In supplying this FDI, the foreign firm is not really meeting a demand for capital, but is instead meeting a demand for financial services in the Australian market. The firm's proposed supply of FDI is derived from that demand.

Now assume that the foreign investment rules prohibit this planned FDI. How will this affect supply, demand, returns and levels of investment? The foreign investor will have to consider alternative, less efficient ways to enter the market, such as delivering the services electronically, without having a commercial presence in the country. Entering some contractual arrangement with a domestic investor, say through a franchise or some minority partnership or joint venture, may also be alternatives to the FDI, but they are likely to be poor substitutes as they do not allow the foreign firm to fully exploit the advantages associated with its specific assets. Depending on the technical and economic viability of the alternative ways of entering the market, the foreign firm may even decide against entering at all.

Each of these responses would have some impact on the services market. Entering via some less efficient mode than FDI will limit the competitive impact that the foreign firm will have on the domestic market, and hence prices for services will tend to be higher, and perhaps the product range more limited, than if unrestricted FDI was allowed. The impact on the services market will be most pronounced where the restriction has the effect of completely deterring any market entry by the foreign investor.

However, identifying and interpreting the relevant price wedge will be difficult. Actual prices in the restricted services market could be compared with those in comparable markets where FDI is unrestricted — say international markets for similar financial services or products. But, as noted earlier, identifying an undistorted international benchmark is difficult, and the price wedge could reflect other differences in policy. Furthermore, if the firm is investing to take advantage of some specific asset, such as its reputation or expertise, then it may be very difficult to identify comparable assets in comparable unrestricted markets.

Case 2: Foreign investment in an existing enterprise

Say a foreign telecommunications company wants to buy a controlling interest in a telecommunications company that is being privatised. The foreign firm

feels that it is in a competitive position to take control and run the organisation profitably, drawing on its extensive expertise developed over years of operating in other countries.

Assume that the foreign investment rules restrict it from taking a controlling interest in the company. The foreign firm then decides against investing, rejecting the possible alternative of portfolio investment, as it considers that it needs to have control to make the investment attractive. The restriction will have an impact on the seller of the asset and alternative domestic buyers. With competition from foreign buyers removed, domestic bidders may be able to keep prices down, at the expense of the seller of the asset. The possible effects are easier to identify in the asset market in this case, compared with the above case, where it was easier to identify the effects in terms of the output, or services, market. The tariff equivalent associated with the restriction on foreign capital is given by the difference between the price actually received for the asset and what would have been received if foreign buyers had been allowed to bid for a controlling interest.

However, the practical problem remains — which benchmark price is relevant? That is, what would the asset price or return have been in the absence of the restriction? As noted earlier, asset prices or returns in the telecommunications sector in a country where foreign investment in the sector is not restricted, say the United Kingdom, may not provide a sensible benchmark. Furthermore, in many cases it would be difficult to identify a rate of return for a particular sector. FDI restrictions often apply to specific sectors, but firms are often diversified, and their returns will reflect not only the effect of an FDI restriction in, say, their telecommunications operations.

A further complication is that foreign ownership limits often apply not across a whole sector, but to the control of existing individual firms within a sector. For example, foreign investors may only be allowed to own up to a certain share of the equity in an existing television network or newspaper publishing company. This type of firm level limit may represent a less stringent restriction than a sector-wide one. It may mean, for example, that the foreign investor cannot take over an existing firm in the sector, but it may be able to establish a new one.

Another common feature, and complication, of FDI regimes is that different limits apply to individual foreigners and aggregate foreign investment. For example, in aggregate, foreigners can buy up to 35 per cent of the one third of Telstra's shares which are being offered to the public, but foreign individuals can only hold up to 5 per cent of the total. Furthermore, some regimes involve different restrictions for different types of investors. For example, in civil aviation services markets in both Australia and New Zealand, tighter foreign

ownership limits apply where the investor is a foreign airline. In Australia, foreign airlines currently flying to Australia can acquire up to 40 per cent of a domestic carrier, while other foreign investors can acquire up to 100 per cent, subject to approval (see Australia's Individual Action Plan for APEC). These types of restrictions make it difficult to identify which constraint is binding and how it affects asset prices and returns.

In some cases different foreign ownership limits apply to different firms within a sector. More stringent rules may apply to acquisition of shares in a public utility that is being privatised. For example, in Australia, the Government has approved an acquisition which will result in foreign control of Optus (by British firm Cable and Wireless), but continues to apply more stringent foreign ownership controls on Telstra. This could adversely affect Telstra's competitive position. As demonstrated earlier, limiting competition from foreign buyers may adversely affect the price that the seller of Telstra shares can get. Furthermore, higher FDI may bring with it advantages such as international experience and expertise (which may not be readily available via other means such as contracting), and limiting Telstra's access to these could damage its competitive position. These types of economic effects are important, but very difficult to detect and isolate in sectoral or firm level comparisons of rates of return.

A final complication is that, in practice, the restriction on foreign ownership may be only one of a number of restrictions applied. For example, approval for foreign ownership up to some limit may be granted, subject to conditions on location of the plant or membership of the board. Like the direct restriction on foreign ownership shares, these sorts of restrictions will affect rates of return and prices but, as discussed below, it is very difficult to determine how.

Quantifying other restrictions on market entry and operations

The FDI barriers discussed in the previous sections involve direct quantity or value restrictions on FDI. The size of these barriers, as well as others which involve direct price, rate of return or quantity restrictions, can potentially be modelled in a simple supply and demand framework, although there are many practical and conceptual difficulties.

There are a range of additional barriers which are less transparent in their impact on prices, returns and quantities — those classified as indirect restrictions in the previous chapter.

In general, these barriers will all impose some costs on foreign investors. For example, a screening process will involve time and other resource costs for investors, as well as introducing additional uncertainty. Similarly, restrictions

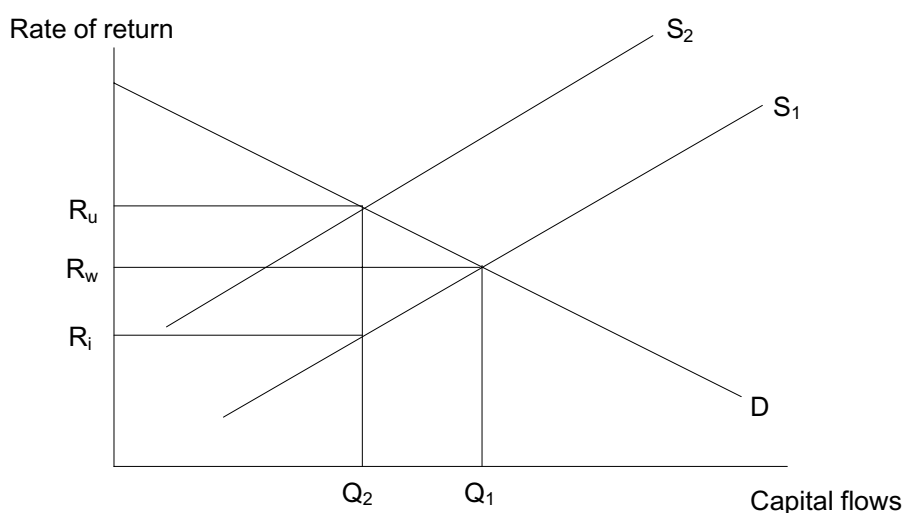
on the inputs used (such as requirements that local labour and other local inputs be used) could increase the costs of the investment. As with the quantity restriction discussed above, there will be some tax or tariff equivalent of these types of FDI restrictions. The additional costs of foreign investment will translate into lower returns for the investor, and/or higher prices for the services they deliver.

The impacts that these restrictions have on returns to the foreign investors and the prices paid by consumers of their services will depend on supply and demand in the relevant market (Box 5.2). In some cases the investor may be able to pass part of the additional costs onto consumers of its services, while in others the investor may have to bear a large part of the costs (if demand is relatively price elastic).

These cases where the FDI barrier involves a cost impost on the foreign investor contrast with the above case of the limit or quota on foreign equity. The quota may actually result in higher returns for the foreign investor, whereas the cost imposts will lead to lower returns for foreign investors unless all the costs can be passed on to consumers.

Box 5.2: The impact of an FDI restriction which increases the cost of the investment

The impact of an FDI barrier which increases the cost of the investment, say by requiring the investor go through a screening process or by restricting the inputs used in the investment, can be illustrated in the following simple partial equilibrium diagram.



Assume that the demand for the foreign capital is a decreasing function of the rate of return (D in figure) — those using the capital demand less as the required rate of return increases. The supply of foreign capital is an increasing function of the rate of return (S_1 in figure) — as returns rise, foreign investors are less willing to supply more capital to the sector.

The restriction or barrier effectively shifts the supply curve upward (to S_2 in figure). At any given rate of return, the foreign investors are less willing to invest, given the additional policy-induced costs they must incur. As a result, less foreign capital is used (quantity of capital used falls from Q_1 to Q_2). Those using capital face higher required rates of return (R_u), as the limited amount of foreign capital must be rationed in some way. The foreign investors face a lower rate of return (R_i).

This simple model can be adjusted to illustrate the effects of investment barriers under alternative supply and demand assumptions, including the case as in Box 5.1, where the supply of foreign capital is horizontal — any amount is available at the world market rate of return.

A range of practical difficulties arise in actually identifying or estimating the costs involved with most FDI barriers. Many of these restrictions are not clearly defined, and their impact will vary widely across sectors and projects. For example, the effects of restrictions on board membership depend on how board membership influences the profitability of the firm and the service price and range it offers. Similarly, the degree of restriction associated with application of some national interest or economic benefit test will vary widely across different types of investments. In some cases approval may be granted readily, with minimal impact on the investment decision. In others, the need to go through a screening process may deter the investor completely from proceeding with the proposal. Information on the number of applications approved (as published by the screening or approval authority in many countries, including Australia) may not therefore be a good indicator of the degree of restrictiveness of a screening process. Even though the reported approval rate may be high, it is not possible to know how many applications for potentially profitable investments may have been deterred.

As discussed in the previous chapter, in terms of frequency of use, these types of restrictions are probably more significant than the direct quantity and price restrictions. Furthermore, the fact that they are often not very transparent and involve considerable discretion for the authorities and uncertainty for investors means that they could be very costly. It is therefore important to get some alternative measure or indicator of the extent of these barriers, to provide a basis for assessing their impacts.

Summing up on tariff equivalents

The analytical tools that have been used over many years to assess trade barriers are also helpful to some extent in the analysis of FDI barriers. Conceptually, it is possible to identify price or rate of return wedges, or tariff equivalents, for FDI restrictions. The relevant measures, or wedges, will depend on the type of restriction — for example, whether it is a direct limit on foreign ownership of new assets or acquisitions of existing assets, or whether it involves some cost imposed on the foreign investor. In some cases it will be appropriate to analyse the impact of the restriction in terms of its impact on asset prices or rates of return (say where the investment is in an existing asset), while in others it may be best to identify impacts on the prices of the good or service that the foreign investor intends to deliver (say where the investor is setting up a new establishment).

However, there are many difficulties with directly measuring tariff equivalents for FDI barriers. For example, in identifying rate of return impacts, it is very difficult to isolate the effects of the FDI barrier. It is difficult to identify an appropriate benchmark, or what the return would be in the absence of the FDI barrier.

The conceptual and practical measurement difficulties are even more apparent for those FDI impediments which take less direct and transparent forms.

5.3 Alternative indicators of the degree of restriction of FDI

The appropriate indicator or measure of the degree of FDI restrictiveness depends largely on how the information is to be used. For example, if the indicator is to be an input into general equilibrium modelling of the impacts of FDI barriers and the gains from their removal, it should provide information about price, rate of return or quantity distortions, or at least be amenable to conversion into these terms. If instead the aim is to set rules and monitor progress in trade and investment liberalisation, less precise measures may be useful, provided they allow comparability between countries. For example, if countries commit to generally reduce the use of FDI restrictions, then some frequency or coverage type measures, as used for non-tariff barriers, may be useful.

Frequency and coverage measures

Frequency measures are based on simple counts of the number of barriers applying in a given sector or economy. Together with coverage ratios — the

percentage of the value of trade that is subject to some barriers — they have traditionally been used to measure non-tariff barriers to trade (PECC 1995). They could potentially be used to quantify the nature and extent of barriers to FDI.

For APEC economies, PECC has estimated several frequency indices or ratios for barriers to services trade, based on the information contained in the country schedules in the GATS. The indices refer to all four modes of supply, not only commercial presence and FDI. Separate indices can be calculated for market access and national treatment commitments.

The frequency ratios are based on counts of the number of commitments that each country makes to have sectors or sub-sectors unrestricted or partially restricted, relative to the maximum possible number of unrestricted commitments. Sectors or sub-sectors scheduled with no restrictions or exemptions (a 'none' listing in the country schedule) are assigned a score of one; those listed with some partial exemptions are assigned a value of 0.5; and those which are unbound or not scheduled are assigned a value of zero. To calculate the frequency ratio, the number of commitments to have no restrictions or partial restrictions is expressed relative to the total number of possible commitments (ie 620 for each country, given that there are 155 sectors and sub-sectors and 4 modes of supply (Hoekman 1995)). The ratio is then converted to a percentage.

The higher the ratio, the greater the number of impediments, or the more restricted is services trade in the sector or economy. A frequency ratio of 70 per cent is taken to imply that 70 per cent of the sector is restricted. This interpretation is based on the assumption that unscheduled sectors are restricted. As noted earlier, the positive list approach to the country schedules means that no information is provided on the sectors and measures that are not listed. While there are some good reasons to expect that countries would be more reluctant to schedule sectors which are restricted, it may be that there are some sectors which are unscheduled but not restricted. To take account of this, PECC also calculates the ratios under the assumption that all unscheduled sectors and commitments are unrestricted. As expected, this substantially reduces the frequency ratios (PECC 1995).

While PECC does not estimate separate frequency ratios for commercial presence measures by country and sector, it does calculate separate ratios for each mode, aggregated across all APEC economies and sectors. This indicates that only 23 per cent of APEC service markets are completely open to delivery of services via establishment of commercial presence. However, commercial presence is not the most restricted mode of service market access. It ranks second behind temporary movement of people.

Coverage ratios measure the share of the value of services production or trade that is subject to some restrictions. Examples of these ratios have been calculated by the Industry Commission in past Annual Reports. These types of measures can overstate the extent of restrictions. The base of the ratio may underestimate the value of services trade, as it generally will not include trade via FDI. Therefore, all else constant, the value of the coverage ratio will be overstated, particularly for sectors where trade via FDI is relatively important.

Frequency and coverage ratios provide some useful insights into the extent of restrictions across countries and sectors. They may therefore be useful in the policy development process, by providing the basis for tracking reductions in the number of measures used over time. Comparisons of ratios across sectors or economies may also highlight priority areas for reform.

These measures are more useful than some alternative indicators of the degree of openness to FDI. For example, the share of inward FDI stocks as a percentage of GDP is commonly used as an indicator of the openness of a country to foreign investment (Bora 1996). However, such measures take no account of the actual barriers applied. Furthermore, relatively low levels of FDI may reflect a wide range of factors, not only the presence of policy barriers.

A major shortcoming of frequency and coverage ratios or indices is that they do not provide any information about likely impacts of barriers on prices or rates of return — the type of information that is necessary if the size of FDI barriers and the possible gains from their removal are to be estimated. Even if measures of the barriers are not explicitly included in liberalisation negotiations, as they have been for goods trade, they are still vital for helping to provide the impetus for reform. This is especially relevant for APEC, where negotiations are ongoing (Petri 1997b). Estimates of economic impacts are perhaps even more important for FDI liberalisation because, in the case of FDI, national sovereignty and national security concerns often arise and governments need to be convinced that the economic benefits of removing barriers will more than offset any perceived costs.

From frequency ratios to ‘tariff equivalents’

Hoekman (1995) uses frequency ratios as a starting point for estimating ‘tariff equivalent’ measures of the relative degree of restriction of services trade across countries and sectors. He arbitrarily defines a set of benchmark ‘guesstimates’ of tariff equivalents for each sector to reflect a country that is highly restricted with respect to market access. A value of 200 per cent is

chosen for the most restricted sectors such as postal and telecommunications services, while values between 20 and 50 per cent are assigned to more open sectors such as tourism and education services. Each country and sector is then assigned a value related to that benchmark. For example, the benchmark for postal services is set at 200, then if a country has a frequency ratio of 50 per cent for postal services, its tariff equivalent for that sector is 100. For countries which make no commitments for postal services, such as Australia, the frequency ratio is zero and the tariff equivalent for the sector is 200.

Different overall country and sector measures can then be calculated, with the values depending on the weights chosen for different sectors and countries.

While these ‘tariff equivalents’ provide some indication of the relative degree of restriction of services trade across sectors and countries, their usefulness as a basis for policy development, country comparisons and modelling of the economic effects of FDI barriers is limited, for several reasons.

First, interpreting ‘no commitment’ as meaning that restrictions exist may lead to misleading or biased results. There are many cases where a country does not have restrictions, but has not made commitments for the sector in the GATS. For example, Singapore does not apply restrictions in civil aviation (APEC 1996). However, it does not schedule the sub-sector in the GATS, and is therefore recorded as applying restrictions (with a tariff equivalent of 200) in Hoekman’s estimates. Some countries may not schedule some sectors or make commitments simply because they do not have the relevant sectors or activities in their economies. For example, space transport services are scheduled only by three countries. Other services such as maritime transport and inland waterway transport are simply not relevant for some countries, and therefore no commitments are made. (Australia does not schedule space transport or inland waterway transport.) Furthermore, developing countries make, on average, far fewer commitments than higher income countries, in part reflecting their relatively undeveloped services sectors. In short, a higher score may not necessarily reflect a less open or liberal policy regime.

Second, all types of restrictions listed in the country schedules are given equal weight in the index. For example, a country that lists a market access restriction in the form of a 49 per cent limit on foreign ownership gets the same score as a country that lists a screening process. No account is taken of the likely differences in economic impact of different types of restrictions. Hoekman does distinguish between measures which are scheduled as unbound, and those which are unscheduled, with the former assigned a score of 0.5 in the index and the latter 1. The implicit assumption is that the more substantial restrictions are in the unscheduled sectors. However, as noted above, this may not be reasonable.

Third, the ‘tariff equivalents’ are simply benchmarks. For example, the 200 per cent for postal services does not mean that prices or returns in the sector are 200 per cent higher than they would be in the absence of restrictions. The restrictions on postal services are simply twice as widespread or frequent as they are in a sector where the tariff equivalent is 100.

Fourth, the tariff equivalents only include market access restrictions, not national treatment. They therefore provide an incomplete indication of the extent of restrictions.

Finally, these GATS-based tariff equivalents combine measures which restrict all modes of service delivery, not only commercial presence and FDI. It is, however, important to distinguish between barriers to FDI and barriers to the other modes of supply, as they are likely to operate through different channels and will need to be modelled in different ways. For example, a particular FDI restriction may be best treated as a tax on foreign investor profits, whereas restrictions on cross-border services trade may be better treated as a wedge between domestic and foreign service prices. Further, the links between cross-border trade restrictions and FDI restrictions cannot be analysed if the two types are lumped together. It is also important to distinguish between FDI and other restrictions for the purposes of policy development. FDI may raise national sovereignty concerns and may therefore need to be addressed separately from cross-border trade.

Hoekman’s estimates have already been used in several studies of trade and investment liberalisation (discussed in the following chapter). In each case, the authors note the limitations of the tariff or tax equivalent measures used. For example, Petri (1997a) models FDI barriers as a tax on foreign profits. He uses Hoekman’s tariff equivalents for the service sector but notes that these estimates need to be treated with caution (in the primary and manufacturing sectors he assumes barriers to FDI are half as high as tariff equivalents on goods). If indices could be derived which better reflect the size or economic significance of FDI barriers, relative to an unrestricted benchmark, they could potentially provide the basis for calculation of tax rates on profits for foreign capital in various sectors. These tax rates, or tariff equivalents, could then be substituted into a Petri style framework.

New tariff equivalent estimates

Alternative tariff equivalents, or indices of the degree of restrictiveness of FDI, are developed in this section. They address several of the shortcomings of Hoekman’s approach. For example, instead of being based on the information contained in the positive GATS schedules, and the assumption that

unscheduled sectors are restricted, they are based on information on actual restrictions (as reported in Chapter 4). Information on the types of barriers and their likely relative economic impacts is incorporated, so that the measures provide a more useful basis for modelling the effects of FDI liberalisation. Furthermore, FDI impediments are identified separately from restrictions on other modes of service delivery, and restrictions on all aspects of FDI, not only market access, are incorporated.

The indices of the relative degree of restriction (by economy or sector) can be translated into some tariff equivalent or tax equivalent. A completely open FDI regime can be assigned an index value of zero and a corresponding tax rate of zero, while at the other extreme a complete ban on FDI can be assigned an index value of 1 and, say, a corresponding tax rate of 100 per cent.

There are a range of issues to address in devising sensible and useful indices. These include:

- which impediments to include as separate components of the index;
- the weights to assign to each type of barrier (for example, what should the relative weights be for a screening process involving some vague national interest assessment and a restriction on the ownership or operations of a foreign company?); and
- the weights to assign when aggregating across sectors or countries.

Barriers to include in the index

The components of the index capture the major types of barriers or impediments, as classified in Chapter 4: restrictions on entry and establishment; restrictions on control and management; and restrictions on operations. These broad categories can be further disaggregated, to take account of the relative restrictiveness of different barriers.

Restrictions on entry and establishment are broken into limits on foreign ownership and requirements for screening and notification. Limits on foreign ownership are further be divided into cases where no foreign ownership is allowed, those where it is allowed up to some maximum, say 49 per cent, and finally those cases where investment in an existing firm is limited, but the same limits do not apply to greenfield investment.

Screening and approval is divided further into: simple requirements that the investor notify the relevant authority and register the investment; approval unless judged contrary to the national interest; and approval only if the investor can demonstrate that the investment will result in a net economic benefit for the country.

There is also substantial variation in the nature and extent of restrictions in the other two broad categories: management and control; and inputs and operations. Separate components of the index could be used to capture these. For example, in terms of ownership and control, a limit on the number of foreign board members may be less onerous than a requirement that the government appoint one board member or that it have the right to veto management decisions. However, making these types of distinctions requires detailed information on FDI regimes in each country and requires a substantial degree of judgement, which complicates the indices.

Aggregating across different types of impediments

In assigning weights to different types of barriers, the aim is to ensure that the indices make economic sense. The weights are set to reflect the relative economic costs of different types of restrictions. For example, a restriction on board membership is likely to be less important in terms of distorting investment patterns and levels than a ban on foreign ownership, and the index does not assign equal weights to these types of measures. Similarly, the index should not have the property that more types of restrictions necessarily result in a higher index value. A single restriction in the form of a complete ban on foreign ownership could involve a higher economic cost than a package of several less onerous restrictions, such as screening requirements and limits on board membership. Fewer restrictions are not necessarily better, and the index reflects this. The suggested set of weights is presented in Table 5.1.

A maximum score of one is assigned when there is a complete ban on foreign ownership. A score of one is also possible when there is a partial ban on foreign ownership as well as stringent approval, management and operational restrictions. In contrast, a country which applied no restrictions would score zero, while one that used only a simple notification process would score 0.05.

The suggested weights are of course arbitrary, and may not be particularly relevant to some cases. For example, to deal with situations where foreign ownership limits apply to investment in existing firms but not new ones, the foreign equity weight is halved (see Table 5.1). The suggested weights also imply that a limit on foreign ownership could be more restrictive than other impediments, such as input and operational restrictions (0.2) in the form of a local content requirement. In practice, the input restriction may be more distortionary than the equity limit, particularly if the foreign equity limit is not binding. But equally, the local content requirement may not be particularly onerous in some situations. Further, as noted in Chapter 4, local content and other trade related investment measures tend not to be applied widely in services sectors.

While there may be some inconsistencies in the results obtained using the suggested categories and weights, they provide a simple and transparent starting point, and a useful alternative to measures which treat all types of barriers equally. The sensitivity of the results to the weights chosen is examined in Appendix A.

Table 5.1: Components of an index of FDI restrictions

<i>Type of restriction</i>	<i>Weight</i>
Foreign equity limits on all firms	
no foreign equity permitted	1
less than 50 per cent foreign equity permitted	0.5
more than 50 per cent and less than 100 per cent foreign equity permitted	0.25
Foreign equity limits on existing firms, none on greenfield	
no foreign equity permitted	0.5
less than 50 per cent foreign equity permitted	0.25
more than 50 per cent and less than 100 per cent foreign equity permitted	0.125
Screening and approval	
investor required to demonstrate net economic benefits	0.1
approval unless contrary to national interest	0.075
notification (pre or post)	0.05
Control and management restrictions	
all firms	0.2
existing firms, none for greenfield	0.1
Input and operational restrictions	
all firms	0.2
existing firms, none for greenfield	0.1

Aggregating across sectors and economies

The initial index numbers are calculated for individual GATS sub-sectors in individual economies. To get an overall FDI restrictiveness index for a country, sector scores would need to be added, and in doing this the relative importance of sectors must be taken into account. The most obvious way to aggregate would be to weight each sector according to its share in the total value of service sector output in the country. In practice this is difficult, as

disaggregated services output data are not always available. An extension would be to assign higher weights to sectors which supply intermediate inputs (such as transport), to reflect the relatively high economic cost associated with distorting intermediate input markets.¹

When aggregating across economies, to get an indication of the relative degree of restrictiveness in selected sectors, the most obvious way to weight would be according to the contribution of the economy to the value of world services output (or the value for the relevant group of economies, such as the OECD or APEC). This may also be constrained by data availability.

However, often the aggregation issue will not arise, because sub-sector measures for each economy will be more useful than aggregated sector or economy measures.

Results

Using the weights for different types of barriers shown in Table 5.1, FDI restrictiveness indices are presented for fifteen APEC economies and eleven GATS sectors. The sectoral results are simple rather than weighted averages of the results for the GATS sub-sectors. The index values are presented in Appendix A and details of the methodology used to calculate the indices are also discussed in the Appendix.

Across the sectors, the indices indicate that communications and financial services tend to be subject to the most stringent FDI controls. Scores are particularly high for the communications sector because many economies impose ownership limits in both telecommunications and broadcasting and also have their postal services closed to foreign entry. The least restricted sectors include business, distribution, environmental and recreational services.

Across the economies examined, Korea, Indonesia, Thailand, China and the Philippines score relatively high, reflecting the foreign ownership bans applied in several sectors, along with restrictions on the management and operation of foreign firms. The United States and Hong Kong tend to have the lowest index values.

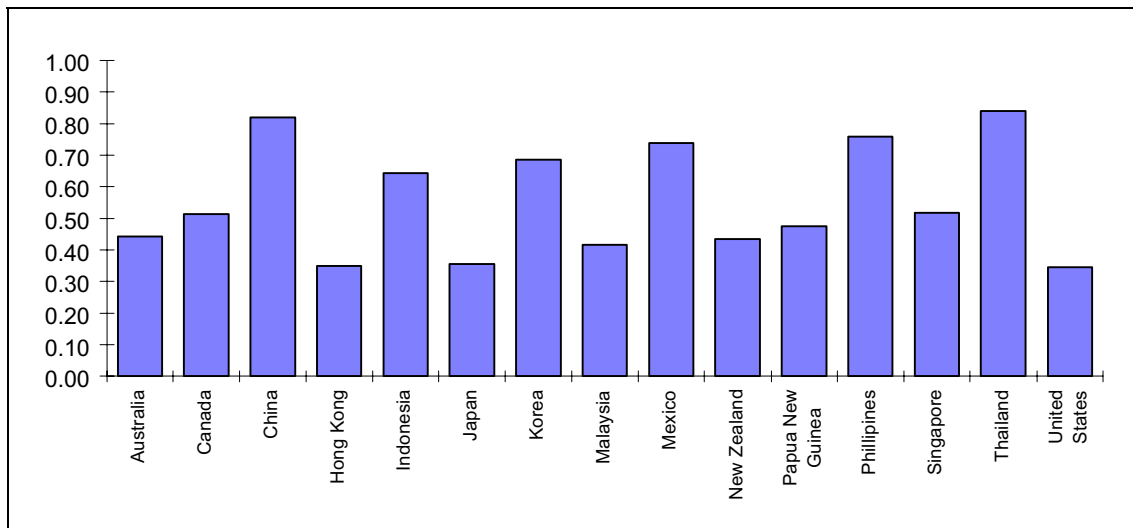
For Australia, the index value is 0.175 for many sectors, reflecting horizontal restrictions. This index value comprises 0.075 for the approval process (with

¹ For Hoekman's tariff equivalents, weights for the GATS sectors were estimated as the share of the sector's output in the total value of service sector output for an 'average' industrialised country. An interesting feature of the estimates is the relatively low weights for some services which are important intermediate inputs. For example, transport and communications services have lower weights than business services.

approval unless the project is contrary to the national interest) plus 0.1 for the management and control restriction that at least two board members of a public company must be Australian. Australia's highest scores are for the communications and financial services sectors.

Figure 5.1 presents index values for communications services (postal, courier, telecommunications and audio visual services). According to these indices, Thailand has the most restricted communications sector followed by China, the Philippines and Mexico. These countries tend to have highly restrictive horizontal commitments which result in a high score for all sectors, plus specific restrictions on communications. For example, Thailand imposes foreign equity restrictions, management restrictions and approval requirements at the horizontal level, giving a minimum score of 0.775 for all sectors. In addition, postal services are completely closed and there are operational restrictions on two telecommunications sub-sectors, which increase Thailand's score for the communications sector as a whole to 0.838. The United States has the least restricted communications sector, followed by Hong Kong and Japan. Australia scores 0.443 for communications services, reflecting limitations on the foreign ownership of Telstra, a closed postal sector and foreign ownership and control restrictions on television broadcasting.

Figure 5.1: FDI restrictiveness indices for communications services in selected APEC economies



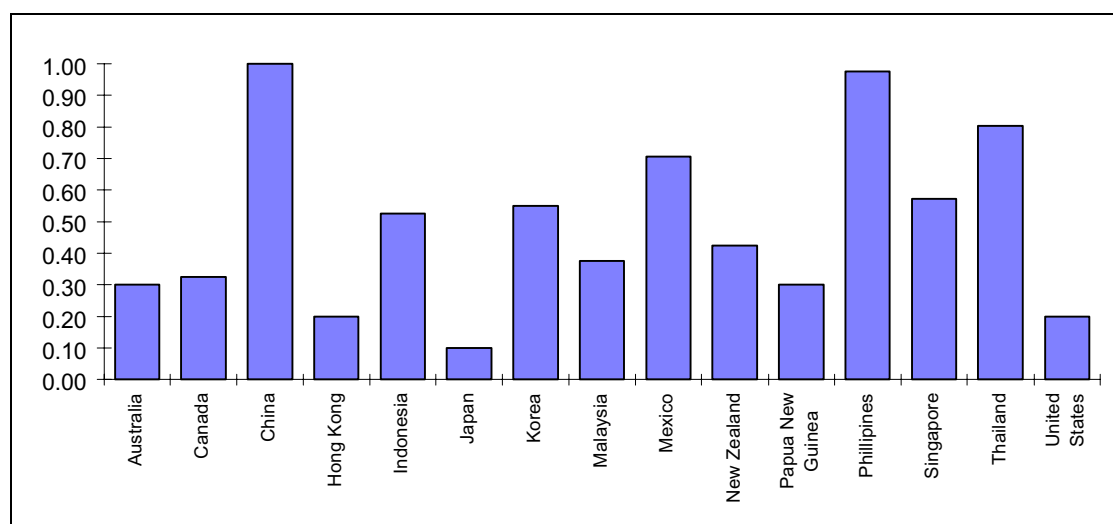
The results for the GATS communications sector highlight a number of problems with the indices of restrictiveness for FDI. First, calculating the index for the whole communications sector as a simple average of the sub-sector scores means that restrictions (or lack of them) in important sub-sectors,

such as telecommunications, are given insufficient weight. Instead, the index for the sector as a whole is unduly affected by the often relatively tight restrictions in the much smaller postal sub-sector. For example, the telecommunications sector in Hong Kong has a restrictiveness index of 0.2, but because FDI in postal services is prohibited and sector scores are derived as the simple average of sub-sector scores, the restrictiveness index for Hong Kong's communications sector as a whole is 0.35.

Thus, in some cases it may be more useful to examine sub-sector scores, rather than the broad GATS sector scores (some sub-sector scores are also provided in Appendix A). Figure 5.2 presents FDI restrictiveness indices for the telecommunications sub-sector, which reveal greater variation than those for the total communications sector. The index for Singapore is relatively high, reflecting Singapore Telecom's monopoly rights on the provision of wire-based local and international telecommunications services until 2000. Japan's index for telecommunications is low because the index for its highly restricted voice telephony market is offset by its unrestricted value-added and non-voice telecommunications markets.

Second, countries which do not schedule a sector in the GATS and do not supply information in the APEC Investment Guide or Individual Action Plans are assumed to have no restrictions on that sector. This is the case for the telecommunications sector in Malaysia and Papua New Guinea (for which only limited information is available), resulting in implausibly low index values.

Figure 5.2: FDI restrictiveness indices for telecommunications services in selected APEC economies



Third, to restrict the value of the index between zero and one, multiple restrictions of the same type are counted only once. This may lead to an underestimate of FDI restrictiveness for economies which apply many restrictions of the same type, compared with economies which may impose fewer restrictions of different types. For example, Mexico and New Zealand receive the same score for operational restrictions applying to the motion picture projections sub-sector, but Mexico imposes four different operational restrictions on motion picture projections while New Zealand applies only one operational restriction. Also, the severity of restrictions is assumed to be the same, yet in practice there may be considerable variation across economies. For example, in the above case, one of Mexico's restrictions requires that 30 per cent of screen time must be devoted to Mexican films, while the New Zealand requirement is less restrictive, with six per cent of the New Zealand Broadcasting Commission budget to be allocated to Maori programming.

Finally, the values of the indices are dependent on the weights that are assumed to apply to different restrictions. As noted earlier, the sensitivity of the restrictiveness indices to variations in the weights is examined in Appendix A.

Index values for the financial services sector are presented in Figure 5.3. According to these indices, the Philippines, Korea and Thailand have by far the most restricted financial service sectors. The Philippines scores 0.954, reflecting horizontal restrictions (worth 0.475) plus foreign equity restrictions for insurance, banking and other financial services. New Zealand, the United States and Hong Kong have the least restrictive financial sectors according to the indices, all imposing operational and/or management and control restrictions on some financial services. Australia scores 0.450 for financial services, reflecting limitations on foreign ownership of the four major banks (large scale transfer of ownership to foreigners is considered contrary to the national interest (Costello 1997)), and some operational restrictions. China's index for financial services is relatively low, even though many restrictions are imposed on its insurance and banking sectors. This is because China applies many restrictions of the same type, imposing five operational restrictions on FDI in its banking sector and seven operational restrictions on FDI in insurance and related services. In each case, only one operational restriction is counted in the index.

In contrast to communications and financial services, the indices for business services indicate that foreign investment in this sector tends to be relatively unrestricted (Figure 5.4). The United States, Hong Kong, Japan and New Zealand score very low index values for business services, reflecting few FDI restrictions in this sector. Countries which record high index values for

business services (Thailand, Korea, Indonesia and the Philippines) tend to have a high score for their horizontal commitments (see Appendix A for an explanation of how horizontal commitments are treated), with few or no additional restrictions on business services specifically. Australia scores an index of 0.183 for business services, only marginally above the horizontal score (0.175), the difference reflecting management and control restrictions on law and accounting services.

Figure 5.3: FDI restrictiveness indices for financial services in selected APEC economies

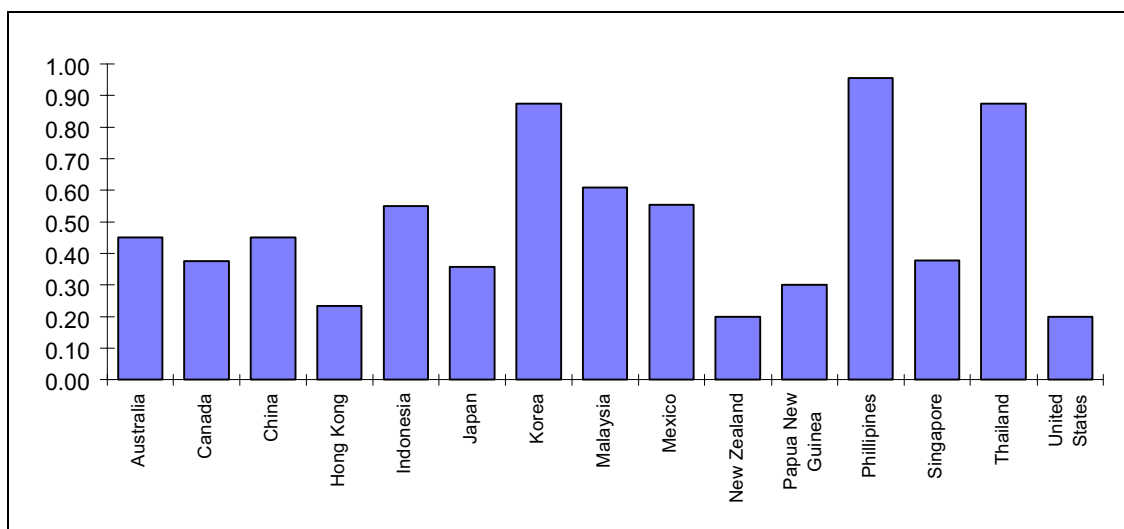
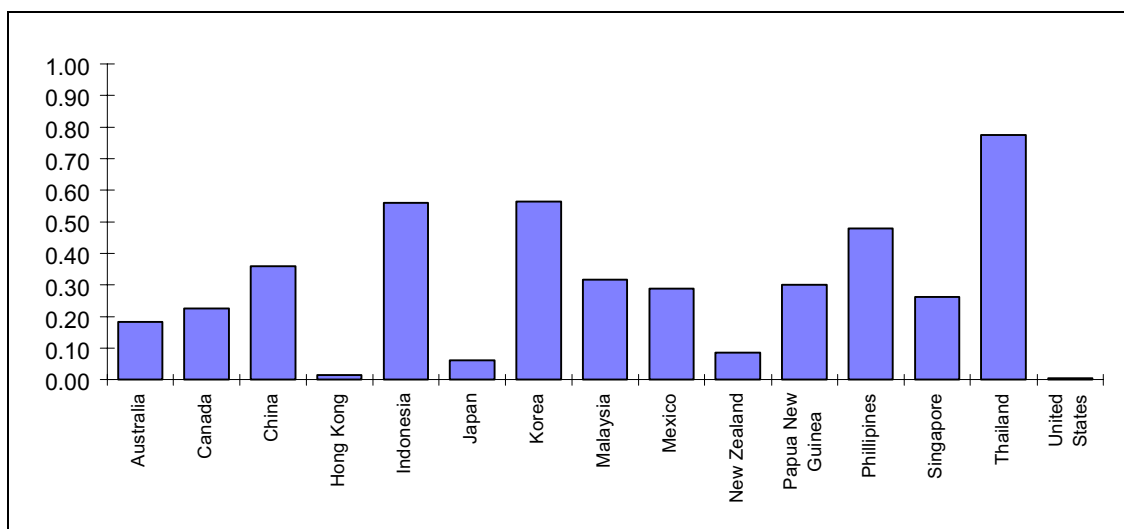


Figure 5.4: FDI restrictiveness indices for business services in selected APEC economies



Effective rates of assistance and effective tax rates

Before moving on to consider options for modelling general equilibrium effects, some further possible measures of the size or extent of investment barriers should be noted. One alternative theoretical measure of the size of investment distortions has been developed by Bond and Guisinger (1985) and Guisinger (1989). They extend the effective rate of assistance measure of output market distortions (mainly tariffs and quotas) to include factor market distortions, in the form of investment incentives. The aim is to capture the extent to which investment incentives provide protection for domestic resources.

While the measure is developed for investment incentives, it could potentially be applied to investment barriers as well. However, there seem to be some fundamental problems with applying the method to FDI barriers. The measure is developed under the assumption of no foreign investment, as investors and investments are in the same country (Guisinger 1989, p. 283). Furthermore, it is assumed that all the benefits of the incentives are captured by the owners of capital. Finally, moving from the theory to a practical measure also raises a range of issues — in particular, the appropriate benchmark returns to use in the analysis.

Guisinger (1989) develops a further measure — an extension of the effective tax rate, which summarises the effects of a range of measures on post-tax returns. A measure of the tax impost associated with foreign investment barriers is potentially a very useful input for general equilibrium modelling. An increase in the tax on returns to foreign capital could be relatively straightforward to model. This theoretical effective tax rate measure is developed under the same assumptions as the effective rate of assistance (that is, investment incentives only, domestic investment only), so it would have to be modified for the case of barriers to FDI. As in the case of the effective rate of assistance, identifying the appropriate benchmark is likely to be difficult.

Other methods

Some further techniques for estimating the size or ‘strength’ of investment barriers have been developed in finance theory. These are based on the notion that restrictions on international investment will influence rates of return, so that assets or portfolios of equivalent risk will be priced differently, with the size of the difference reflecting the extent of the restriction. Black (1974) argues that foreign investment barriers imposed by a country can be modelled as a tax on the value of foreign holdings of assets in the country. This tax causes asset pricing behaviour to differ from that predicted by the capital asset

pricing model. The size of the deviation from the standard model, and hence the implicit tax, is a measure of the ‘strength’ of the investment restrictions.

While this method may be useful for analysing the broad impact of general investment restrictions, it may not be very useful for analysing restrictions that apply specifically to FDI (rather than to portfolio investment as well), and for restrictions that vary widely across sectors within a country (the tests apply to returns to a country portfolio, rather than to individual firms or sectors within a country).

Stockmarket data have been used in a number of other studies of the impacts of general foreign investment restrictions, not those specifically relating to FDI. For example, the International Finance Corporation (part of the World Bank) has developed an Investable Index for emerging stockmarkets, and these indices have been used by Claessens and Rhee (1995) to estimate the impact of foreign investment restrictions on investment returns.

Interest parity conditions have been used by de Brouwer as indicators of the openness of East Asian financial markets (de Brouwer 1997). FDI restrictions are one of several possible reasons for exchange and interest differentials. The differentials are not decomposed into those parts which are due to FDI restrictions and those which are due to other exchange and capital restrictions.

5.4 Conclusions

While diverse and complicated in practice, most FDI regimes boil down to measures which restrict the level of foreign investment and/or impose costs on foreign investors. These measures therefore have theoretical tax or tariff equivalents — that is, they distort asset prices, or returns, or the prices of services delivered by foreign investors.

The most direct way to measure the size of these barriers would be to measure the price wedge or tariff equivalent for the relevant asset or service. This is difficult in practice. Observed differences in prices in markets where FDI is restricted and unrestricted are likely to reflect a range of factors, and it is difficult to isolate the effects of the FDI barriers.

An alternative to direct observation of the tariff equivalents is to try to estimate them, based on information about the types of barriers and their likely economic impacts. The tariff equivalent estimates that have been used to date have only incorporated information on the number of barriers (actual, from the GATS, and assumed) in each country or sector, not the type.

The methodology suggested in this chapter takes into account information on the number and type of barriers and their relative economic importance. For example, economies and sectors where FDI is completely banned have a higher score, or tariff equivalent, than those where FDI is restricted in less stringent or potentially less distorting ways, such as via screening and registration processes. Indices for selected APEC economies and service sectors are presented in Appendix A.

To assess the impacts of these barriers on services trade and economies generally, the estimated tariff equivalents must be substituted into a model which specifies the role of FDI and services trade and its links with other activities in the economy. Modelling issues and options are discussed in the following chapter.

6 MODELLING THE IMPACT OF FDI BARRIERS

Little modelling work has been done to examine the impact of reducing barriers to investment in either goods or services. The major obstacles that have limited work on investment liberalisation include the lack of an appropriate modelling framework, inaccurate measures of investment barriers and incomplete investment data. This chapter examines how previous studies on services and investment liberalisation have attempted to overcome these obstacles and briefly compares their results. The concluding chapter draws on the strengths of these studies to propose a way forward for modelling the implications of services sector investment liberalisation for Australia.

6.1 A modelling framework

Only a few attempts have been made to model the impacts of liberalising investment in a general equilibrium framework. The approaches adopted in these studies can be divided broadly into three groups. The first group do not model FDI explicitly, but when examining the impact of services trade liberalisation they implicitly include the reduction of FDI barriers. The second group of studies do not explicitly model FDI and do not explicitly model the reduction of investment barriers. They simulate the effects of investment liberalisation by making assumptions about the variables which increased capital mobility may affect. The third group of studies explicitly model FDI and capture many of the important economic characteristics of FDI which are not included in the other studies. While those in the third group have some shortcomings, they provide a sound basis for examining the implications of investment liberalisation for Australia.

The first group of studies include those that use Hoekman's (1995) estimates of tariff equivalents to examine the impacts of services trade liberalisation (see for example, Brown, Deardorff and Stern 1996, Dee, Geisler and Watts 1996 and Brown, Deardorff, Fox and Stern 1995). These estimates include barriers to services traded cross-border, via the temporary movement of people and via FDI. Therefore, estimating the impacts of reducing these tariff equivalents necessarily includes the reduction of barriers to FDI. There are a number of problems with this approach, the most important being that the models do not

capture the important economic characteristics of FDI. For example, foreign owned firms typically benefit from their parents' firm-specific assets. Hence, the demand and production characteristics of foreign affiliates need to be modelled as distinct activities from other production activities in both the host and home economies.

A good example is Brown, Deardorff and Stern (1996) who model trade liberalisation in services under various assumptions using a general equilibrium framework. The authors argue that the movement of factors from the exporting country to the importing country, as in FDI, to provide a service does not pose a problem within their model. Such factors are still part of their home country's factor markets, and the fact that they happen to be located abroad should not matter for the determination of the various market equilibria.

This approach to modelling FDI liberalisation has some appeal as it does not require a restructuring of most general equilibrium models. Barriers to FDI are combined with barriers to services traded cross-border and removing them results in cheaper services and increased services trade for the liberalising economy.

However, the possible benefits of FDI and its role in services trade are not modelled, so important effects such as the scope for foreign varieties of non-tradeable services to be consumed in the host economy via FDI are not captured. Furthermore, this approach requires that services traded via FDI are included in the initial database as exports and imports of services for each region. This is not usually the case in general equilibrium models. Brown, Deardorff and Stern use balance of payments data to assemble their services database. As explained in Chapter 2, these data do not capture the value of services traded through FDI. This means that although the barriers to FDI are being removed as part of services trade liberalisation, the original levels of services traded failed to include services traded through FDI.

The authors note that they do not take account of changes in FDI that might occur as a result of changes in the rate of return on capital. Therefore, removing impediments to FDI does not result in higher levels of FDI in the liberalising country as would be expected.

An additional problem raised by Brown, Deardorff and Stern is their assumption that all factors of production are regarded as participating in the factor markets of their country of origin. Often services traded via FDI require factors to be employed from the importing country's factor markets. For example, most foreign subsidiaries are staffed, at least to some extent, with

local labour. This will matter for the effects of trade on the economies involved.

In the second group of studies, FDI is not modelled explicitly and barriers to FDI are not incorporated explicitly. Investment liberalisation is assumed to affect certain variables, such as the extent of capital mobility, and the effects of this are then simulated. For example, Bora and Guisinger (1997) use a general equilibrium model which incorporates international capital mobility. No distinction is made between portfolio investment and FDI. Investment liberalisation is modelled by increasing capital inflows to liberalising economies by varying degrees.

Donovan and Mai (1996) use the MEGABARE model to estimate the effects of trade liberalisation under standard and high degrees of capital mobility. They assume that removing investment barriers will result in increased capital mobility. No distinction is made between portfolio investment and FDI. Investment in the model is a function of the differential between national and global rates of return. The parameter which determines the responsiveness of investment to changes in rates of return is initially set to achieve a plausible pattern of international capital flows. To represent a more liberal investment regime, the degree of capital mobility in the model is increased fourfold over the standard value.

McKibbin and Wilcoxon (1996) also allow international capital mobility in their general equilibrium model, G-Cubed. However, they do not attempt to model the impact of investment liberalisation directly. Instead, they examine the impact of a rise in total factor productivity in the services sector which they consider a plausible side effect of trade liberalisation in services in the context of the GATS. While FDI is not included explicitly in the model, the economy-wide data presumably cover the activities of both domestic and foreign firms. Therefore, the productivity of both domestic and foreign firms operating in the domestic economy is assumed to increase as a result of services trade liberalisation. The improved performance of services results in resources being channelled into that sector. These resources come from other sectors in the economy as well as from overseas. The increase in return to capital in the services sector leads to an inflow of foreign financial capital into physical investment in the liberalising economy.

A study by Martin and Yanagishima (1993) is often cited as one which models the impact of both trade and investment liberalisation by East Asian countries. Trade liberalisation in this study involved reducing tariff and non-tariff protection levels to half their post Uruguay Round, post NAFTA levels. It was assumed that by improving access to foreign producers' goods, liberalisation helps to attract investment from foreign multinationals that are

pursuing global production strategies. To reflect the increase in foreign investment induced by trade liberalisation, FDI into liberalising developing countries was assumed to double under a broad-based MFN liberalisation scenario and to increase by 50 per cent under a more limited liberalisation scenario. Therefore, this study did not examine the impacts of removing barriers to FDI, but assumed that trade liberalisation would result in increased foreign investment.

The third group of studies overcome many of the problems discussed above by incorporating FDI into a general equilibrium model in a way consistent with theoretical work. The main feature of these models is that they recognise the links between parents and foreign affiliates and differentiate between foreign and domestic firms within a given region.

The first of these studies, Markusen, Rutherford and Hunter (1995), compares the impact of trade liberalisation with and without multinational firms in an industry with increasing returns to scale and imperfect competition. The models are applied to the North American (Canada, Mexico and the United States) auto market with the rest of the world supply explicitly modelled and endogenous. While the scope of this study is narrow and does not include investment liberalisation, their methodology and results are useful when considering how to model the role of FDI and the effects of reducing barriers to FDI.

The principal difference between the model with multinational firms and that with only national firms is the response of a firm's market share to trade liberalisation. In the multinational firm model, a firm's US market share includes imports from its branch plants in Canada and Mexico. Thus, additional cars imported from Mexico to the United States constitute an increase in the combined market share of US firms because the Mexican exporter is US owned. Other general equilibrium models ignore multinationality (or FDI) and impose an assumption that a firm's domestic production equals its market share. In the national firm model, a car imported into the United States from Mexico constitutes an erosion in the US firm's market share.

Therefore, holding rest of world imports constant, an import from Mexico in the multinational model lowers the North American firm's perceived elasticity of demand and raises its markup. The same import in the national firm model raises the North American firm's perceived elasticity of demand and lowers its markup. Markusen, Rutherford and Hunter therefore hypothesise that the presence of multinational firms, or FDI, reduces the benefits of trade liberalisation. The results of their applied work are discussed below.

It is important to note that the results of this study are dependent on the assumption that multinational firms coordinate price and quantity decisions across markets to maximise global rather than regional profits. It is not clear whether this is generally the case in services markets or if some foreign affiliates make their own price and output decisions. Obviously, the extent of international coordination by multinationals will determine the relevance of the anti-competitive effects identified by Markusen, Rutherford and Hunter and, therefore, the extent to which FDI affects trade liberalisation.

The second study is more general in terms of incorporating FDI into a general equilibrium framework. Petri's (1997a) model of FDI distinguishes between the activities of domestic and foreign-owned firms at the microeconomic level.

Petri provides for production linkages between parents and subsidiaries. This is accomplished by identifying three types of requirements in the input structure: value added inputs; inputs sourced from parents; and other intermediate inputs. Therefore, it overcomes the problem identified in Brown, Deardorff and Stern (1996) of assuming that all factors of production are from the country of origin.

The demand side of the model differs from the conventional approach. The Armington assumption that product varieties are differentiated by place of production is replaced with the assumption that they are differentiated by both country of ownership and place of production.¹ The resulting demand system means that foreign varieties are available not just as imports, but also as local purchases from the subsidiaries of foreign firms. Petri notes that an important economic implication is that FDI does not merely promote increased production of a commodity in the host economy, but it also changes how the products of that economy enter world demand. The FDI mechanism has important implications for modelling services trade liberalisation because it allows foreign varieties to be consumed in non-tradeable sectors through the presence of foreign firms. This is an important characteristic of FDI that is not included in the first group of studies, which require all foreign products to be imported.

The allocation of capital across regions is modelled in an optimising framework which allocates capital to the highest return activities, but also takes into account investor preferences for a particular mix of investment instruments. The capital allocation function therefore relies not only on the investment's expected rate of return, but also on the investor's utility function

¹ Petri's model does not capture product variety as a factor which affects consumer utility per se. However, increased choice is likely to be an important benefit of FDI liberalisation.

which minimises risk. This is analogous to consumer choice among goods subject to a budget constraint and yields similar demand functions for relating investment allocations to prices of assets. Thus, the allocation of capital between sectors and between domestic and foreign investments is not based on arbitrage conditions assuming perfect substitution, but on a constant elasticity of substitution (CES) formulation with less than perfect substitutability.

Petri models barriers to FDI as a tax on FDI profits. Therefore, FDI barriers affect the rate of return on FDI stocks and hence discourage FDI flows into the region imposing the barriers. Reducing or removing FDI barriers increases the returns to FDI stocks, which results in more foreign investment being allocated to the liberalising country or region. As note in Chapter 5, however, not all FDI restrictions are best treated as a tax on the returns to FDI.

6.2 Quantifying investment barriers

The problems associated with identifying and measuring barriers to investment are discussed in detail in Chapter 5. Many studies (Petri 1997a, Brown et al 1996, Dee, Geisler and Watts 1996, Brown, Deardorff, Fox and Stern 1996) which attempt to estimate the impacts of services trade and/or investment liberalisation use tariff equivalents estimated by Hoekman (1995). These tariff equivalents were calculated on the basis of scheduled commitments under the GATS. Therefore, they include barriers that are applied on all four modes of supply identified by the Agreement, including FDI. The limitations of these estimates are identified by Hoekman (1995) and are discussed in Chapter 5.

The implications of applying the estimated tariff equivalents to just services trade (as in Brown et al 1996) or just FDI (as in Petri 1997a) may not be important because the limitations of Hoekman's estimates mean that the results of the studies which use them only provide an indication of the impacts of services and/or investment liberalisation. Hoekman (1995) notes that care must be taken in allowing for a wide range of 'benchmark' tariff equivalents when the GATS-based tariff equivalents are used to model the impacts of liberalising services trade. However, if modelling results are to provide insights into the role of FDI and the linkages between trade and investment liberalisation, then FDI and barriers to it need to be modelled explicitly.

Studies that do not use Hoekman's tariff equivalent estimates tend to use even more arbitrary measures of investment restrictions. For example, Bora and Guisinger (1997) model the impact of investment liberalisation by varying the ratio of FDI flows to gross investment. Three cases are examined: high, medium and low. The high case involves doubling the 1995 ratio, the low case increases it by 30 per cent while the middle case is between these two

estimates. The authors do not distinguish between FDI and portfolio investment and do not allow for foreign firms in the domestic economy. Their results, therefore, only reflect the impact of a capital inflow on domestic firms. Donovan and Mai (1996) use a fourfold increase in the capital mobility parameter as a proxy for investment liberalisation, because of the difficulties with quantifying investment barriers.

6.3 Data

Bilateral investment flows and stocks data at a disaggregated industry level are available only for a few countries. Even data for services traded cross-border are weak compared with those on merchandise trade (see Box 6.1). The only study which attempts to incorporate FDI flows and stocks into a general equilibrium framework is Petri (1997a). Other studies assume that services traded via FDI are incorporated in balance of payments data, or make use of more aggregated capital flow and stock data within the models.

Petri's model has six regions, UCAN (United States, Canada, Australia and New Zealand), Japan, NIEs (Hong Kong, Korea, Mexico, Singapore and Taiwan), ASEAN4 (Indonesia, Malaysia, the Philippines and Thailand), China and ROW (rest of world), and three sectors, primary, manufacturing and services. The 1992 GTAP dataset (Hertel 1997) is used as the basis for the model and is disaggregated into domestic and FDI components. This is done using an international matrix of FDI stocks to determine the overall levels of FDI output, and US and Japanese survey data to estimate the sectoral breakdown of FDI output and the share of that output that is sold domestically or exported. US and Japanese survey data are applied in their respective regions, and simple averages of the two data points are used to represent the characteristics of FDI by other investors.

The resulting dataset provides new estimates of the relative importance of FDI in the world economy. Petri estimates that world-wide output of foreign-invested firms (FDI imports) was US\$3 386 billion in 1992, slightly less than world-wide cross-border imports of US\$3 439 billion in that year (Table 6.1). According to Petri's estimates, FDI accounted for 8 per cent of world output in 1992 (Table 6.2). FDI is most important for manufacturing, accounting for 18 per cent of global manufacturing output in 1992. Somewhat surprising is the low share of services output accounted for by FDI compared with the primary and manufacturing sectors. The largest estimate is the share of foreign firm output as a percentage of foreign and domestic output for ASEAN4 manufacturing (69 per cent). Petri notes that while the assumptions behind

this figure bear further review, FDI clearly plays a central role in many regional economies.

Box 6.1: Services data

The main source of data on trade in services is the balance of payments (BOP), which has many weaknesses. BOP statistics are often inconsistent between countries. For example, a user of BOP statistics cannot be certain that what is reported for exports of port services by country A consists of the same items reported as exports of port services by country B. Coverage of BOP statistics is also often incomplete. At virtually any level of aggregation, some nations may not report information on a certain item. This results in biased figures when data are added across countries to arrive at regional totals, and discrepancies when comparing world imports and exports for a category.

Information on trade by origin and destination is not available on a comparable and detailed basis. In general the amount of detail or disaggregation for data on trade in services is very limited. Trade data on a volume basis are not available. This makes it very difficult to determine what proportion of growth in a category in a given year is due to inflation as opposed to improvements in quality.

Comparability of BOP statistics over time is difficult because methodologies and definitions employed by countries may vary between years. It is also difficult, if not impossible, to relate service trade statistics to domestic production and employment data. To some extent this is because different countries include different items in various components of the current account. More important is that trade data are simply too aggregated, so that concordances have little meaning.

Finally, data on sales by foreign affiliates are excluded. BOP conventions imply that if factors of production move to another country for a period longer than one year, a change in residency status is considered to have occurred. The output generated by such factors that is sold in the host market will no longer be registered as trade in the BOP.

Source: Hoekman (1995).

Petri's estimates differ considerably from foreign affiliate sales reported by the USITC. For example, Petri estimates that, for the UCAN region, the value of services imported via FDI was nearly three times greater than the value of services imported cross-border in 1992. The USITC (1995) estimates that in 1992 services imported into the United States via FDI were only 30 per cent higher than the value of services imported cross-border. The difference between these estimates can be explained, at least to some extent, by the many assumptions that Petri (1997a) makes to derive regional and sectoral values of

FDI output, which reduce the reliability of his dataset. For example, Petri multiplies total capital stocks by rates of return to estimate capital incomes expected from FDI activities. These capital incomes are then multiplied by ratios of output to capital income to estimate outputs associated with FDI. In contrast, the USITC FDI sales data are collected directly from majority-owned affiliates and are, therefore, presumably more accurate than those estimated by Petri.

Table 6.1: FDI and cross-border trade of goods and services, 1992 (US\$ billion)

	<i>UCAN</i>	<i>Japan</i>	<i>NIEs</i>	<i>ASEAN4</i>	<i>China</i>	<i>ROW</i>	<i>World</i>
<i>Inward FDI output</i>							
primary	122	3	51	34	15	205	430
manufacturing	558	81	180	160	46	1404	2428
services	254	14	29	27	10	194	528
total	934	99	259	221	71	1803	3386
<i>Imports</i>							
primary	97	94	57	19	9	236	511
manufacturing	625	145	354	106	76	1043	2348
services	92	88	56	7	4	334	580
total	813	326	466	132	88	1613	3439

Source: Petri (1997a).

Table 6.2: **The role of FDI in regional output, 1992** (per cent of total output)

	<i>UCAN</i>	<i>Japan</i>	<i>NIEs</i>	<i>ASEAN4</i>	<i>China</i>	<i>ROW</i>	<i>World</i>
<i>Inward FDI output^a</i>							
primary	12	1	25	25	6	9	1
manufacturing	18	3	20	69	9	23	18
services	3	0	3	9	3	2	2
total	8	1	13	33	7	10	8
<i>Outward FDI output^b</i>							
primary	21	2	14	2	0	7	10
manufacturing	26	11	12	10	0	1	18
services	2	2	2	1	0	2	2
total	10	6	8	4	0	8	8

a Calculated as the output of foreign firms operating in the domestic economy as a percentage of output of domestic and foreign firms operating in the domestic economy.

b Calculated as the output of domestic firms operating in foreign economies as a percentage of output of domestic firms operating in the domestic and foreign economies.

Source: Petri (1997a).

6.4 Results

Brown, Deardorff and Stern (1996) model a 25 per cent reduction in the services barriers estimated by Hoekman, under different modelling assumptions. First, they model services trade liberalisation with monopolistic competition, including effects of scale and variety for the services sector. All countries gain in aggregate from the assumed liberalisation of trade in services, although the increases in welfare are never much more than two percent of GDP. Total trade increases for all countries, but the terms of trade move by small amounts in favour of some and against others. Comparing these results with those under differing modelling assumptions (excluding variety effects, imperfect competition excluding effects of both scale and variety and perfect competition and product differentiation by country of origin) the authors find that these assumptions for the services sector do not matter much. All the effects reported for all of the countries are very similar across scenarios. The authors note that it is not too surprising that the assumptions about behaviour in services make only a small difference to the overall effects, since the assumptions about all other sectors remain unchanged and it is these other

sectors that provide the bulk of the interaction among countries through international trade.

Bora and Guisinger (1997) note that the limitations of their model and assumptions regarding investment barriers mean that their results provide only general insights on the impact of an inflow of foreign capital. They find that exports and imports increase for most countries. Notable exceptions are Canada, the United States and Japan which all record a decrease in imports. Terms of trade effects are apparent, with sources of capital (the EU and the rest of the world in this case) experiencing changes in their favour, while capital recipients have terms of trade changes against them. GDP effects are positive for recipient countries. An interesting result is the comparison of increased capital before and after trade liberalisation (Uruguay and NAFTA). Some countries such as Indonesia and Malaysia are not as well off with a capital inflow in the post liberalisation period as would be expected. The authors do not provide an explanation as to why this unexpected result occurs, but presumably this is because terms of trade effects are more adverse once these countries' shares of world trade have reached 'free trade' levels.

Donovan and Mai (1996) also emphasise that their results are not estimates of the effects of investment liberalisation. Such estimation would require detailed information on investment barriers, which is not available. Their results do illustrate the links between trade and investment liberalisation. They indicate that the gains from trade liberalisation in APEC are generally enhanced when capital mobility is increased to simulate the effect of regional investment liberalisation. Some economies gain more than others from the increase in capital mobility. The gains are measured in terms of increases in real gross national expenditure.

The results of the McKibbin and Wilcoxon (1996) study show how productivity growth in Australia's service sector increases the return to capital which feeds through the rest of the economy. The increase in the return to capital in the service sector leads to an inflow of foreign financial capital into physical investment in the Australian service sector. The higher return to capital in services also leads to a rise in the return to other domestic assets such as bonds as funds are relocated to physical investment in the service sector. The rise in interest rates also attracts foreign capital. The inflow of capital leads to an appreciation of the exchange rate which increases the price of exports and lowers the price of imports, thus worsening the overall trade balance and current account balance. After productivity growth returns to its baseline level, the trade and current account balances begin to improve as the return to the increased resources in the service sector is able to service the build-up of debt and repatriate profits on FDI.

The study also examines the impacts of a global rise in services productivity. The outcome for Australia's GDP is similar to that without the foreign productivity increase, but the trade balance effects are quite different. The inflow of foreign capital is smaller than when only Australia experiences the productivity gain because of opportunities for investment in foreign economies. Thus, the deterioration in the trade balance is much less.

The theoretical section of Markusen, Rutherford and Hunter (1995) suggested that the pro-competitive gains from trade liberalisation will be weaker when there is multinational ownership and coordination than when there is strictly national ownership of firms. In the latter case, the pro-competitive effects work through erosions of market share due to imports and the resulting increased perceived elasticity of demand. In the multinational case, the imports are the firms' own products, and hence this effect does not operate. Their theory is supported in a general equilibrium model, where stronger positive effects on output per firm and decreases in markups and in the number of firms were found under the national ownership assumption. The authors caution against too literal an interpretation of the results given the many simplifying assumptions that were made.

Petri (1997a) examined three scenarios to estimate the importance of FDI liberalisation. The first scenario eliminates all barriers to goods trade and reduces barriers to foreign investment by 50 per cent. These policies are assumed to be adopted by all APEC regions on an MFN basis. This scenario results in global welfare gains of US\$260 billion annually. APEC's developing economies — the NIEs, ASEAN4 and China — gain proportionately the most, partly because they start out with high initial barriers and partly because they are, as major traders, the greatest beneficiaries of the expansion of trade stimulated by liberalisation. Petri finds that the ROW region loses as a result of APEC liberalisation, even if it occurs on an MFN basis. The fact that the ROW gains when only trade is liberalised suggests that the loss is a consequence of FDI liberalisation. In effect, ROW loses FDI investments to APEC as a result of the more attractive business conditions created by liberalisation. Therefore, regions do not merely forgo gains by not liberalising, but can lose by failing to keep up with liberalising neighbours.

The second scenario involves limiting liberalisation to trade to examine the importance of FDI liberalisation. In the absence of investment liberalisation, global welfare gains are diminished by US\$60 billion (or 23 per cent) relative to full liberalisation (scenario 1). The ROW region is the one beneficiary, relative to scenario 1, with welfare improving by US\$61 billion because of diminished APEC competition for FDI.

The third scenario limits APEC's trade and investment liberalisation to APEC partners only. Preferential liberalisation generates US\$59 billion less in welfare gains than MFN liberalisation. In this solution, FDI from the ROW is excluded from liberalisation, and is therefore lower than under MFN liberalisation. Since ROW is a principal foreign investor in UCAN's service sector, the ROW's lower FDI limits UCAN's benefits from service sector liberalisation.

6.5 Conclusions

Most of the studies which attempt to model investment liberalisation or incorporate capital flows into their trade liberalisation scenarios do not accurately model FDI or investment liberalisation. The most general model is developed by Petri (1997a). His modelling framework captures important features of FDI identified in the literature, distinguishing between activities of foreign affiliates and domestic firms, and identifying links between foreign affiliates and parent firms and the different product varieties produced by foreign affiliates in the host economy.

The following chapter proposes a way forward for modelling FDI liberalisation in Australia, based on Petri's modelling framework and the FDI restrictiveness indices developed in Chapter 5.

7 A WAY FORWARD

While the studies reviewed in Chapter 6 have some shortcomings and none provides a clear methodology, they do provide guidance on the appropriate next steps for modelling the reduction of FDI barriers in Australia. They assist in determining which areas require further development and which methodologies can be borrowed from existing research. Drawing on the strengths of these studies, a way forward for modelling investment liberalisation is proposed and some additional modelling requirements are considered.

7.1 A modelling framework

The modelling framework developed by Petri captures some of the features of FDI identified in the theoretical literature which are important when examining the impacts of liberalisation. Petri's framework recognises that foreign-owned firms benefit from their parents' assets by modelling them as distinct from domestic-owned firms, both in terms of demand and production characteristics. Petri also allows foreign affiliates to be linked to parents through intermediate input flows. Petri's model distinguishes between varieties produced by the foreign affiliate and those produced by domestic firms of the host economy or by subsidiaries of other parents.

Reducing FDI barriers in Petri's model is equivalent to reducing taxes on the profits earned by foreign affiliates. As profits increase, foreign affiliates can offer lower prices to domestic consumers. Increased profits also attract FDI flows to the liberalising economy, which increases competition and the demand for inputs from both the host and home economies.

All of these links should be incorporated when modelling the impacts for Australia of FDI liberalisation in the services sector. The inclusion of trans-border price and output coordination by multinationals identified by Markusen, Rutherford and Hunter also needs to be considered. The relevance of multinational coordination will depend on the sector and countries being analysed. It may be more likely to occur in the North American auto market than for other types of FDI, such as that in service industries.

Petri notes a further interaction that is identified in the theory but not incorporated into his FDI model. That is the interaction between foreign

affiliates and their host economy through various dynamic relationships, including externalities associated with scale or technological spillovers. Theoretical literature suggests that these could be important implications of FDI. Also, Petri's model specification does not capture the benefits for consumers of increased product variety which is likely to be an important outcome of FDI liberalisation. The possibility for including these effects should also be examined when developing the Australian modelling framework for FDI.

Developing a global modelling framework similar to Petri's is a large task. An alternative, smaller task may be to apply Petri's framework to a model of the Australian economy. This would allow the impact of FDI liberalisation in Australia to be examined without requiring information for other individual regions. The microeconomic distinctions between domestic and foreign firms made by Petri would still have to be incorporated, although only for the Australian economy. A major drawback of this approach is the limitations a single country model places on the liberalisation scenarios that can be examined. Using a model of the Australian economy means that only unilateral FDI liberalisation scenarios can be considered. While these scenarios will provide a starting point for examining FDI liberalisation, useful policy results will require modelling multilateral FDI liberalisation in the context of the GATS and other investment agreements.

A second alternative is to build on Petri's multiregional model of FDI. This would allow a range of FDI scenarios to be examined including unilateral liberalisation. A separate region for Australia would need to be identified and a disaggregated service sector would be beneficial. An improved method for quantifying investment barriers could also be used.

7.2 Quantifying investment barriers

From reviewing previous studies, it is obvious that the measurement of investment barriers is the major gap that still exists in modelling investment liberalisation. None of the studies discussed above explicitly modelled the liberalisation of FDI barriers. They used tariff equivalents estimated by Hoekman which are based on a number of arbitrary assumptions and include barriers to services traded cross-border. Therefore, it appears that a major task involved in developing a model for estimating the impacts of FDI liberalisation would be quantifying the barriers to FDI in services sectors in the countries of interest.

An alternative to the tariff equivalents estimated by Hoekman is discussed in Chapter 5. This method addresses several of the shortcomings of Hoekman's

approach and allows barriers to FDI to be identified separately from other barriers to services trade. The indices provided in Appendix A can be used as a basis for estimating tariff equivalents for each of the services industries identified within the model, to allow a full examination of the impacts of services sector FDI liberalisation to be undertaken.

As an input into general equilibrium modelling, the indices could be applied in a variety of ways. Following Petri's (1997a) approach, the indices could be translated into a tax on the returns to foreign investment (FDI profits). An index value of 1.00, which reflects either a total prohibition on FDI or a highly restricted sector, could be translated into a tax rate of, say, 100 per cent. An FDI regime involving only screening with approval unless the investment is contrary to the national interest would translate into a tax rate of 7.5 per cent. This could be thought of as the cost impost associated with going through the approval process. If the indices are applied as a tax on FDI profits, the allocation of the tax revenue needs to be considered. It may be distributed to the government or to domestic producers or may simply be retained. Alternatively, the indices could be applied as an increase in a foreign investor's production costs or a decrease in their productivity.

7.3 Data

If the Australian economy model was adopted, rather than building on Petri's existing global model, the required amount of information on FDI flows, stocks and activities would be reduced substantially. However, a more detailed industry disaggregation than Petri's could be adopted so that the impact of removing FDI barriers from individual service industries could be modelled.

An existing model of the Australian economy could be used as the basis of the Australian FDI model. While the dataset of an existing model would cover the activities of both domestic and foreign firms, it would not distinguish between them. Therefore, the dataset would need to be split into domestic and FDI components using information on the scale and structure of FDI from other sources.

First, the overall output associated with FDI stocks in Australia would need to be estimated. This could be done following Petri's methodology, which involves multiplying total capital stock associated with FDI by rates of return to estimate the capital incomes expected from FDI activities, and then multiplying these by ratios of output to capital income to estimate outputs associated with FDI. Petri calculates rates of return and ratios of output to capital income from GTAP input-output data.

Second, information on the production technology of FDI activities would be required. For this, Petri used estimates from US and Japanese surveys of outward FDI investment and it is likely that these estimates would have to be used in the Australian FDI model. FDI activities are linked to home firms through purchases of intermediate inputs. Ratios of such inputs to FDI output are estimated by sector and region from US and Japanese survey data. These ratios are applied to estimated FDI output to derive trade flows that result from home sourcing. The foreign affiliates' remaining intermediate inputs are allocated to products purchased in the host country's markets (including imported products), with a composition based on that of domestic firms. Value added coefficients of affiliates are also assumed to be the same as those of domestic firms.

Finally, the distribution of FDI sales across different markets is used to specify the demand side of the system. Based on survey data, Petri distinguishes between local sales, home market sales and third market sales. In the Australian model, it would only be necessary to distinguish between local and overseas sales. In the absence of information indicating that Australian-based foreign affiliates behave differently from those based in Japan or the United States, Petri's US and Japanese survey data could be used to estimate the shares of FDI output in Australia that are sold locally and abroad.

7.4 Additional modelling requirements

As discussed in Chapter 5, it is important to distinguish between barriers to FDI and those affecting other modes of supply, so the impact of liberalising FDI can be isolated from the effects of reducing other trade barriers. However, to examine the interactions and make comparisons between FDI liberalisation and the reduction or removal of barriers on other modes of supply, it will also be necessary to have information on restrictions on other modes of service supply.

A collaborative project currently being undertaken by the Industry Commission and the Australian National University may provide valuable information on barriers to services trade in Australia for all modes of supply. The project, which commenced recently and is expected to be completed in three years, aims to quantify the impediments to trade and investment affecting services industries in Australia. The first three industries selected for analysis are air transport, financial services and telecommunications services.

Also important for modelling FDI liberalisation is the substitution between different modes of supply. For example, some services can be delivered easily by both FDI and cross-border trade. Reducing or removing barriers to FDI

may result in more of these services being delivered by FDI and less being delivered cross-border. For other services which are not easily traded by an alternative mode of supply, liberalising FDI will have little effect on how they are delivered. It will be important to include in the model some indication of the substitution between FDI and other modes of supply for each service industry to capture the full impact of reducing barriers to FDI. A demand specification which distinguishes FDI purchases from cross-border purchases should be sufficient.

7.5 Conclusions

Petri's modelling framework and data sources provide a sound basis for developing a general equilibrium model of FDI for Australia. However, the policy relevance of a single country FDI model may be limited, given that FDI liberalisation is likely to be negotiated on a multilateral basis. An alternative, and ultimately more useful, approach may be to incorporate Australia as a separate region in Petri's multiregion FDI model.

Regardless of the framework adopted, one important problem remains — the measurement of FDI barriers. Without accurate quantification of the barriers to FDI, it is only possible to provide indicative estimates of the impacts of FDI liberalisation. The FDI restrictiveness indices developed in this report provide a starting point for attempts to estimate more accurately the barriers to FDI in service sectors.

APPENDIX A: INDICES OF THE DEGREE OF FDI RESTRICTIVENESS

Methodology

The basic approach is to summarise information on the number and type of FDI restrictions imposed, by country and sector. For each country and sector, an overall index is calculated to summarise the degree of restriction — a score of 1 indicates that FDI is either completely banned or that it is highly restricted and also involves approval, management and operational restrictions. A score of zero indicates that there are no restrictions on FDI. The choice of the barriers to include in the index and the weights, or relative importance, to assign to different types of barriers is to some extent arbitrary. However, the approach is likely to generate more useful results than the alternative of considering all types of barriers as equivalent. As discussed in Chapter 5, the weights are intended to reflect the relative degree of restriction associated with different policies. A complete ban is assigned a higher weight than a requirement that foreign investors notify the relevant authorities of their intentions. The weights are shown in Table A1. Sensitivity analysis is conducted later in the appendix.

The information required to calculate the indices is taken from several sources: the APEC Guide to Investment Regimes (APEC 1996); the Individual Action Plans developed by APEC members (which include descriptions of the current investment and services trade regimes); and the country schedules of commitments in the GATS. The GATS schedules alone have been used in previous attempts to quantify service trade barriers, but they are an inadequate information base. The positive list approach in the country schedules means that information on many barriers is simply not provided, and assumptions therefore have to be made. The APEC information sources help to fill some of the gaps.

However, there are still some major gaps in the information provided by many countries. For example, Papua New Guinea refers generally to some restricted sectors, but does not provide details on restrictions that apply in particular services sectors. Further, there are some inconsistencies between different information sources for some countries. For example, in its Individual Action Plan the United States indicates that it has no violations of national treatment. However, in its contribution to the APEC Guide, the United States indicates

that foreigners cannot hold licences to provide certain services, such as broadcasting. In cases such as this, where more stringent rules are listed in one source than another, we assume that the more stringent rules apply.

Table A1: Components of an index of FDI restrictions

<i>Type of restriction</i>	<i>Weight</i>
Foreign equity limits on all firms	
no foreign equity permitted	1
less than 50 per cent foreign equity permitted	0.5
more than 50 per cent and less than 100 per cent foreign equity permitted	0.25
Foreign equity limits on existing firms, none on greenfield	
no foreign equity permitted	0.5
less than 50 per cent foreign equity permitted	0.25
more than 50 per cent and less than 100 per cent foreign equity permitted	0.125
Screening and approval	
investor required to demonstrate net economic benefits	0.1
approval unless contrary to national interest	0.075
notification (pre or post)	0.05
Control and management restrictions	
all firms	0.2
existing firms, none for greenfield	0.1
Input and operational restrictions	
all firms	0.2
existing firms, none for greenfield	0.1

Major assumptions and simplifications

As discussed throughout the report, the complicated nature of many FDI regimes makes it difficult to summarise them, and to classify them according to the categories in Table A1. The main complications and the responses and assumptions made are listed below.

GATS sectors considered

The GATS covers 12 broad sectors which encompass 155 subsectors. Indices are calculated for 11 of these broad sectors (by calculating simple averages of subsector scores). Index values for the 'other services' sector are not calculated because the services included in this sector vary greatly across countries, making cross-country comparisons impossible. Similarly, the 'other services' subsectors were also omitted from index calculations.

Ownership limits

If the restriction involves a simple limit on foreign ownership in a sector, then a score of 0.25 is assigned when more than 50 per cent foreign equity is permitted, a score of 0.5 is used when foreign equity is limited to less than 50 per cent but is not completely restricted and a score of 1 is assigned when no foreign ownership is permitted. In many cases, different foreign equity limits apply to new and existing firms, and to single foreign investors and foreign investment in aggregate. Where ownership limits apply to existing but not new firms, the value that is applied to the existing firm is halved. Where limits are specified for individual foreigners and total foreign investment in a sector, we assume that the aggregate foreign ownership limit is the binding one, not the limit on individual foreign holdings. Where foreigners can only enter the market in a joint venture arrangement with locals, but no maximum foreign equity share is specified, a maximum of 50 per cent is assumed.

In some cases, a country specifies that the holder of a licence to provide some service, say broadcasting, cannot be a foreigner, but there are no explicit restrictions on foreign ownership. We assume that the licence restriction is equivalent to a 25 per cent limit on foreign ownership. This is the limit that applies for radio and television licence holders in the United States.

Postal services are treated differently from other sectors because in most countries postal services are closed to private investors (both domestic and foreign). None of the economies for which indices are calculated has listed postal services in its GATS commitments. Some economies note in the APEC Investment Guide or Individual Action Plans that postal services are provided exclusively by the government (for example, New Zealand, China, Mexico and Hong Kong) and are therefore closed to FDI. For economies which do not provide any information on their postal services, it is assumed that the sector is closed to FDI.

Interpretation of screening and approval processes

Judgement is also required in categorising approval processes. If all investments are subject to a net economic benefits test, then the score is 0.1, while if they are only subject to a check that they are not contrary to the national interest the score is 0.075, and if only notification is required the score is 0.05. However, in some cases, the more stringent requirements only apply in some cases — for investments above a certain value or in certain sectors. Unless it is clear that the more stringent requirements do not apply to the services sectors of interest, then it is assumed that they apply. For the screening and approval component of the indices shown in Table A2, Canada gets a higher score than Australia because in Australia approval is usually granted unless the investment is contrary to the national interest, while in Canada a net economic benefits test is part of the approval process.

Restrictions on foreign board members

A commonly used management and control restriction is a specified maximum number of foreign board members, or minimum number of local board members. In many cases this constraint may not be binding. In some cases the foreign entry may not involve establishment of a public company with board members. It may simply involve a small operation establishing a commercial presence. In the absence of information indicating whether this board membership constraint is binding, we assume it is. If the restriction on board members applies only to existing firms and not greenfield, or new, investments then the score is halved as it is clearly less restrictive.

State and national level restrictions

In some cases different restrictions apply across different jurisdictions within a country. For example, the GATS country schedule for the United States indicates that there are several cases where there are no national restrictions, but one or more States (usually a small number) apply some restrictions on the establishment or operations of a foreign firm. For simplicity, these State restrictions are not taken into account in the construction of the indices.

Aggregation across the GATS sub-sectors

The sectors shown in Table A2 are the main sectors defined in the GATS. Within these, there is generally considerable variation in the types of restrictions applied. For example, within the transport sector different rules apply to air transport and other modes. To derive the overall sector score, the sub-sector scores are summed, then this aggregate score is divided by the total number of sub-sectors. For example, if there were three sub-sectors, and

foreign ownership was banned in one of these but completely unrestricted in the other two, then the sector score would be 0.33. The implicit assumption is that all sub-sectors are of equal significance.

Further aggregation may be necessary to get the indices into a form useful for general equilibrium modelling. The sectors shown in Table A2 are useful from a policy perspective, as they are the sectors used in the GATS. However, services are likely to be far more aggregated in a general equilibrium model. While it is suggested in Chapter 6 that Petri's single services sector could be disaggregated, data availability is likely to limit the disaggregation to a few key services. The best way to aggregate the indices is to weight them according to each sector's share in the total value of service sector output for the country.

Treatment of information gaps

As far as possible, the values for each of the 11 GATS sectors in Table A2 are derived from information on each of the sub-sectors listed in the GATS. In some cases there are many sub-sectors for which information is not available. Where possible, the APEC Investment Guide and the Individual Action Plans are used to fill these information gaps. For sub-sectors not scheduled in the GATS and for which no restrictions are listed in either the APEC Investment Guide or the Individual Action Plans, a score of zero is recorded.

A potential problem with this approach is the self-reporting nature of both the APEC Investment Guide and the Individual Action Plans which has resulted in varying levels of detail provided by different countries. As a consequence, economies which provide detailed sectoral information on all restrictions may be assigned a higher score than economies which provide only a general description of their investment regime, even though they may be less restrictive. For example, the Individual Action Plan for Hong Kong provides details on all remaining FDI restrictions by GATS sectors, while Malaysia's Individual Action Plan provides little information on the current status of FDI impediments, instead describing past and future liberalisation measures.

To overcome this problem, the sectors for which no information is available could be omitted and the sector score derived by adding the scores for those sub-sectors where information is available, and dividing it by the number of sub-sectors for which information is available, not the total number of possible sub-sectors. This would result in higher sector scores for most economies, but in particular for those economies which have made few GATS commitments and provided limited information on FDI restrictions in the APEC Investment Guide and their Individual Action Plans.

Double counting

The index weights presented in Table A1 are assigned so as the maximum score for any sector is 1. However, in any sector there may be multiple restrictions of the same type (for example, multiple operational restrictions). To avoid indices over 1, a score for any type of restriction is counted only once. For example, a sector with two operational restrictions applying to all firms would only be assigned a value of 0.2 for those restrictions.

Horizontal restrictions also need to be taken into account to avoid double counting. For example, many countries apply horizontal approval requirements to FDI, but some also apply a net economic needs test in specific sectors. Therefore, when assigning a sector specific score, the horizontal approval requirement (worth 0.075) is replaced by the sector specific economic needs test (worth 0.1), not added to it.

Key findings

Across sectors, the indices indicate that communications, financial services and transport are subject to relatively stringent FDI controls (Table A2). Scores are particularly high in the communications sector because many economies impose ownership limits in both telecommunications and broadcasting and also have their postal services closed to foreign entry. Even in Hong Kong, with one of the most liberal FDI regimes, the score for communications is relatively high, reflecting the fact that postal services are reserved for the government and there are limitations on the number of fixed wire licenses for telecommunications.

Across the economies examined, Korea, Indonesia, Thailand, China and the Philippines score relatively high, reflecting the foreign ownership bans they apply in several sectors, along with restrictions on the management and operations of foreign firms. Thailand, in particular, has high scores, with a minimum score of 0.775 in all sectors. This reflects a horizontal restriction on foreign equity, approval for all foreign investment and a horizontal requirement that commercial presence must be through a Thai registered limited liability company. Australia tends to score less than these economies, but higher than several others, such as the United States, Hong Kong and New Zealand. Hong Kong and the United States tend to have low scores because they have no horizontal notification or screening requirements.

For Australia, many sectors score 0.175, reflecting horizontal restrictions. This comprises 0.075 for the approval process (with approval unless the proposal is contrary to the national interest) plus 0.1 for the management and control restriction that at least two board members of a public company must

be Australian. Australia's highest scores are for the communications sector and the financial sector. In the financial sector, foreign equity restrictions apply to the four major banks, with any large scale transfer of ownership to foreigners considered contrary to the national interest (Costello 1997), and some operational restrictions also apply. The high score for communications reflects the limits on foreign ownership of Telstra, commercial and pay TV networks and the fact that private (foreign or domestic) firms cannot enter the postal services market (all countries score 1 for this). Australia has a slightly higher score than New Zealand for the communications sector, reflecting the fact that New Zealand does not restrict foreign ownership in the broadcasting sub-sector.

Relatively high scores for Australia in transport services also reflect the presence of ownership restrictions. Restrictions on foreign ownership of newspapers are included in the business services score. The overall score for that sector is still quite low, because all the other business sub-sectors are relatively unrestricted.

Sensitivity of indices to variations in restriction weights

The index values presented above are obviously sensitive to the weights that are assigned to the different types of restrictions. To examine the extent of variation in the index values in response to alternative weights, two scenarios are examined using different sets of weights.

In the first scenario, the importance of foreign equity restrictions in the calculation of the indices is reduced by decreasing the value of the base case weights (Table A1) by 50 per cent. To maintain the possible index range between zero and one, the remaining restrictions (screening and approval, control and management and input and operational restrictions) are made more important in the calculation of the indices by increasing the value of their weights by 50 per cent. The new index weights are shown in Table A3 and the resulting indices of restrictiveness and their deviations from the base case are presented in Table A4.

The second scenario increases the importance of foreign equity restrictions by increasing the value of the base case weights by 50 per cent, and reduces the importance of the remaining restrictions by reducing their weights by 50 per cent of their base case levels (see Table A3). The FDI indices of restrictiveness using scenario 2 weights are presented in Table A5.

Table A3: Variations of index weights for sensitivity analysis

<i>Type of restriction</i>	<i>Scenario 1</i>	<i>Scenario 2</i>
Foreign equity limits on all firms		
no foreign equity permitted	1	1
less than 50 per cent foreign equity permitted	0.25	0.75
more than 50 per cent and less than 100 per cent foreign equity permitted	0.125	0.375
Foreign equity limits on existing firms, none on greenfield		
no foreign equity permitted	0.25	0.75
less than 50 per cent foreign equity permitted	0.125	0.375
more than 50 per cent and less than 100 per cent foreign equity permitted	0.0625	0.1875
Screening and approval		
investor required to demonstrate net economic benefits	0.15	0.05
approval unless contrary to national interest	0.1125	0.0375
notification (pre or post)	0.075	0.025
Control and management restrictions		
all firms	0.3	0.1
existing firms, none for greenfield	0.15	0.05
Input and operational restrictions		
all firms	0.3	0.1
existing firms, none for greenfield	0.15	0.05

The FDI restrictiveness indices change significantly when the scenario 1 weights are used, with deviations of between 60 per cent above and 41 per cent below the base case values. Comparing the base case index values with those for scenario 1 reveals which type of FDI restrictions are used by different countries in particular GATS sectors. Index values for most sectors in the majority of countries examined increase as a result of lowering the foreign equity restriction weights and increasing the weights on other restrictions from their base case levels. This suggests that screening, operational and management restrictions are used more widely by most of the countries examined than foreign equity restrictions. Notable exceptions are Korea and Thailand, for which the index values decline for all sectors. Both these economies impose foreign equity restrictions at the horizontal level. The indices for the majority of sectors in Mexico also decline. Overall, however,

the most restricted sectors remain the same as in the base case — communications, financial and transport services. The most restricted economies — the Philippines, Thailand, Korea, Indonesia and China — are also the same under scenario 1 as the base case.

The results for scenario 2 are largely the opposite of those for scenario 1, with most index values declining in the majority of countries. The exceptions are Korea, Thailand and Mexico, where the majority of index values increase. The most restricted sectors and economies remain the same as in the base case.

Thus, while varying the weights on the different types of restrictions has a significant impact on the absolute values of the FDI restrictiveness indices, the relativities of the index values between countries and sectors remain largely unchanged.

Table A2: FDI restrictiveness indices, selected APEC economies and GATS sectors and sub-sectors

	<i>Australia</i>	<i>Canada</i>	<i>China</i>	<i>Hong Kong</i>	<i>Indonesia</i>	<i>Japan</i>	<i>Korea</i>	<i>Malaysia</i>
Business	0.183	0.225	0.360	0.015	0.560	0.062	0.565	0.316
Communications	0.443	0.514	0.819	0.350	0.644	0.350	0.685	0.416
postal	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
courier	0.175	0.200	0.275	0.000	0.525	0.050	0.550	0.075
telecommunications	0.300	0.325	1.000	0.200	0.525	0.100	0.550	0.375
audio visual	0.295	0.530	1.000	0.200	0.525	0.250	0.640	0.215
Construction	0.175	0.200	0.400	0.000	0.525	0.050	0.750	0.775
Distribution	0.175	0.200	0.275	0.050	0.525	0.050	0.625	0.075
Education	0.175	0.200	0.525	0.000	0.525	0.200	0.550	0.075
Environmental	0.175	0.200	0.275	0.000	0.525	0.117	0.700	0.075
Financial	0.450	0.375	0.450	0.233	0.550	0.358	0.875	0.608
insurance and related	0.275	0.425	0.475	0.400	0.575	0.450	0.838	0.600
banking and other	0.625	0.325	0.425	0.067	0.525	0.267	0.913	0.617
Health	0.175	0.200	0.275	0.000	0.525	0.050	0.550	0.317
Tourism	0.175	0.200	0.283	0.000	0.525	0.050	0.617	0.542
Recreational	0.175	0.200	0.275	0.000	0.525	0.050	0.550	0.175
Transport	0.204	0.235	0.455	0.093	0.525	0.114	0.573	0.122

	<i>Mexico</i>	<i>New Zealand</i>	<i>Papua New Guinea</i>	<i>Philippines</i>	<i>Singapore</i>	<i>Thailand</i>	<i>United States</i>
Business	0.289	0.086	0.300	0.479	0.261	0.775	0.005
Communications	0.739	0.434	0.475	0.758	0.518	0.838	0.345
postal	1.000	1.000	1.000	1.000	1.000	1.000	1.000
courier	0.775	0.075	0.300	0.475	0.250	0.775	0.000
telecommunications	0.705	0.425	0.300	0.975	0.571	0.804	0.200
audio visual	0.475	0.235	0.300	0.580	0.250	0.775	0.180
Construction	0.450	0.075	0.300	0.475	0.250	0.775	0.000
Distribution	0.325	0.075	0.300	0.475	0.250	0.775	0.000
Education	0.450	0.075	0.300	0.475	0.250	0.775	0.000
Environmental	0.075	0.075	0.300	0.475	0.250	0.775	0.000
Financial	0.554	0.200	0.300	0.954	0.378	0.875	0.200
insurance and related	0.575	0.125	0.300	0.975	0.250	0.775	0.000
banking and other	0.533	0.275	0.300	0.933	0.506	0.975	0.400
Health	0.408	0.075	0.300	0.475	0.250	0.775	0.000
Tourism	0.275	0.075	0.300	0.808	0.317	0.775	0.000
Recreational	0.075	0.075	0.300	0.475	0.250	0.775	0.000
Transport	0.283	0.131	0.300	0.975	0.250	0.780	0.025

Table A4: FDI restrictiveness indices using scenario 1 weights^a

	<i>Australia</i>	<i>Canada</i>	<i>China</i>	<i>Hong Kong</i>	<i>Indonesia</i>	<i>Japan</i>	<i>Korea</i>	<i>Malaysia</i>
Business	0.275 (50%)	0.320 (42%)	0.470 (31%)	0.023 (53%)	0.590 (5%)	0.093 (50%)	0.347 (-39%)	0.333 (5%)
Communication ^s	0.483 (9%)	0.552 (7%)	0.853 (4%)	0.350 (0%)	0.653 (1%)	0.075 (-3%)	0.528 (-23%)	0.421 (1%)
Construction	0.263 (50%)	0.300 (50%)	0.475 (19%)	0.000 (-)	0.538 (2%)	0.075 (50%)	0.625 (-17%)	0.663 (-14%)
Distribution	0.263 (50%)	0.300 (50%)	0.413 (50%)	0.075 (50%)	0.538 (2%)	0.341 (50%)	0.438 (-30%)	0.113 (51%)
Education	0.263 (50%)	0.300 (50%)	0.538 (2%)	0.000 (-)	0.538 (2%)	0.300 (50%)	0.325 (-41%)	0.113 (51%)
Environmental	0.263 (50%)	0.300 (50%)	0.413 (50%)	0.000 (-)	0.538 (2%)	0.175 (50%)	0.550 (-21%)	0.113 (51%)
Financial	0.550 (22%)	0.563 (50%)	0.675 (50%)	0.350 (50%)	0.575 (5%)	0.538 (50%)	0.813 (-7%)	0.538 (-12%)
Health	0.263 (50%)	0.300 (50%)	0.413 (50%)	0.000 (-)	0.538 (2%)	0.075 (50%)	0.325 (-41%)	0.308 (-3%)
Tourism	0.263 (50%)	0.300 (50%)	0.425 (50%)	0.000 (-)	0.538 (2%)	0.075 50%)	0.425 (-31%)	0.479 (-12%)
Recreational	0.263 (50%)	0.300 (50%)	0.413 (50%)	0.000 (-)	0.538 (2%)	0.075 (50%)	0.325 (-41%)	0.263 (50%)
Transport	0.277 (36%)	0.353 (50%)	0.503 (11%)	0.083 (-11%)	0.538 (2%)	0.134 (18%)	0.359 (-37%)	0.157 (29%)

	<i>Mexico</i>	<i>New Zealand</i>	<i>Papua New Guinea</i>	<i>Philippines</i>	<i>Singapore</i>	<i>Thailand</i>	<i>United States</i>
Business	0.223 (-23%)	0.125 (45%)	0.450 (50%)	0.715 (49%)	0.388 (49%)	0.663 (-14%)	0.008 (60%)
Communication	0.683 (-8%)	0.463 (7%)	0.588 (24%)	0.861 (14%)	0.589 (14%)	0.758 (-10%)	0.368 (7%)
Construction	0.300 (-33%)	0.113 (51%)	0.450 (50%)	0.713 (50%)	0.375 (50%)	0.663 (-14%)	0.000 (-)
Distribution	0.238 (-27%)	0.113 (51%)	0.450 (50%)	0.713 (50%)	0.375 (50%)	0.663 (-14%)	0.000 (-)
Education	0.300 (-33%)	0.113 (51%)	0.450 (50%)	0.713 (50%)	0.375 (50%)	0.663 (-14%)	0.000 (-)
Environmental	0.113 (51%)	0.113 (51%)	0.450 (50%)	0.713 (50%)	0.375 (50%)	0.663 (-14%)	0.000 (-)
Financial	0.352 (-36%)	0.300 (50%)	0.450 (50%)	0.952 (0%)	0.505 (34%)	0.813 (-7%)	0.300 (50%)
Health	0.279 (-32%)	0.113 (51%)	0.450 (50%)	0.713 (50%)	0.375 (50%)	0.663 (-14%)	0.000 (-)
Tourism	0.413 (50%)	0.113 (51%)	0.450 (50%)	0.879 (9%)	0.475 (50%)	0.663 (-14%)	0.000 (-)
Recreational	0.113 (51%)	0.113 (51%)	0.450 (50%)	0.713 (50%)	0.375 (50%)	0.663 (-14%)	0.000 (-)
Transport	0.262 (-7%)	0.166 (27%)	0.450 (50%)	0.963 (-1%)	0.375 (50%)	0.670 (-14%)	0.038 (52%)

a Figures in parentheses are percentage deviations from the base scenario results presented in Table A2.

- No restriction in base scenario.

0 No change.

Table A5: FDI restrictiveness indices using scenario 2 weights^a

	<i>Australia</i>	<i>Canada</i>	<i>China</i>	<i>Hong Kong</i>	<i>Indonesia</i>	<i>Japan</i>	<i>Korea</i>	<i>Malaysia</i>
Business	0.092 (-50%)	0.130 (-42%)	0.249 (-31%)	0.008 (-47%)	0.530 (-5%)	0.031 (-50%)	0.782 (38%)	0.299 (-5%)
Communication ^s	0.403 (-9%)	0.476 (-7%)	0.784 (-4%)	0.350 (0%)	0.634 (-2%)	0.359 (3%)	0.843 (23%)	0.412 (-1%)
Construction	0.088 (-50%)	0.100 (-50%)	0.325 (-19%)	0.000 (-)	0.513 (-2%)	0.025 (-50%)	0.875 (17%)	0.888 (15%)
Distribution	0.088 (-50%)	0.100 (-50%)	0.138 (-50%)	0.025 (-50%)	0.513 (-2%)	0.025 (-50%)	0.813 (30%)	0.038 (-49%)
Education	0.088 (-50%)	0.100 (-50%)	0.513 (-2%)	0.000 (-)	0.513 (-2%)	0.100 (-50%)	0.775 (41%)	0.038 (-49%)
Environmental	0.088 (-50%)	0.100 (-50%)	0.138 (-50%)	0.000 (-)	0.513 (-2%)	0.058 (-50%)	0.850 (21%)	0.038 (-49%)
Financial	0.350 (-22%)	0.188 (-50%)	0.225 (-50%)	0.117 (-50%)	0.525 (-5%)	0.179 (-50%)	0.938 (7%)	0.679 (12%)
Health	0.088 (-50%)	0.100 (-50%)	0.138 (-50%)	0.000 (-)	0.513 (-2%)	0.025 (-50%)	0.775 (41%)	0.325 (3%)
Tourism	0.088 (-50%)	0.100 (-50%)	0.142 (-50%)	0.000 (-)	0.513 (-2%)	0.025 (-50%)	0.808 (31%)	0.604 (11%)
Recreational	0.088 (-50%)	0.100 (-50%)	0.138 (-50%)	0.000 (-)	0.513 (-2%)	0.025 (-50%)	0.775 (41%)	0.088 (-50%)
Transport	0.131 (-36%)	0.118 (-50%)	0.407 (-11%)	0.103 (11%)	0.513 (-2%)	0.095 (-17%)	0.786 (37%)	0.087 (-29%)

	<i>Mexico</i>	<i>New Zealand</i>	<i>Papua New Guinea</i>	<i>Philippines</i>	<i>Singapore</i>	<i>Thailand</i>	<i>United States</i>
Business	0.355 (23%)	0.048 (-44%)	0.150 (-50%)	0.244 (-49%)	0.135 (-48%)	0.888 (15%)	0.003 (-40%)
Communication	0.794 (7%)	0.404 (-7%)	0.363 (-24%)	0.654 (-14%)	0.446 (-14%)	0.919 (10%)	0.323 (-6%)
Construction	0.600 (33%)	0.038 (-49%)	0.150 (-50%)	0.238 (-50%)	0.125 (-50%)	0.888 (15%)	0.000 (-)
Distribution	0.413 (27%)	0.038 (-49%)	0.150 (-50%)	0.238 (-50%)	0.125 (-50%)	0.888 (15%)	0.000 (-)
Education	0.600 (33%)	0.038 (-49%)	0.150 (-50%)	0.238 (-50%)	0.125 (-50%)	0.888 (15%)	0.000 (-)
Environmental	0.038 (-49%)	0.038 (-49%)	0.150 (-50%)	0.238 (-50%)	0.125 (-50%)	0.888 (15%)	0.000 (-)
Financial	0.756 (36%)	0.100 (-50%)	0.150 (-50%)	0.956 (0%)	0.252 (-33%)	0.938 (7%)	0.100 (-50%)
Health	0.538 (32%)	0.038 (-49%)	0.150 (-50%)	0.238 (-50%)	0.125 (-50%)	0.888 (15%)	0.000 (-)
Tourism	0.138 (-50%)	0.038 (-49%)	0.150 (-50%)	0.738 (-9%)	0.158 (-50%)	0.888 (15%)	0.000 (-)
Recreational	0.038 (-49%)	0.038 (-49%)	0.150 (-50%)	0.238 (-50%)	0.125 (-50%)	0.888 (15%)	0.000 (-)
Transport	0.304 (7%)	0.097 (-26%)	0.150 (-50%)	0.988 (1%)	0.125 (-50%)	0.890 (14%)	0.013 (-48%)

a Figures in parentheses are percentage deviations from the base scenario results presented in Table A2.

- No restriction in base scenario.

0 No change.

REFERENCES

- Asia Pacific Economic Cooperation (APEC) 1996, *Guide to the Investment Regimes of Member Economies*, APEC Committee on Trade and Investment, Singapore.
- Australian Bureau of Statistics (ABS) 1994, *International Investment Position, Australia 1992–93*, ABS Cat. No. 5305.0, AGPS, Canberra.
- 1997a, *International Investment Position: Supplementary Country Statistics*, Cat. No. 5352.0, AGPS, Canberra.
- 1997b, *Balance of Payments and International Investment Position, Australia 1995–96*, Cat. No. 5363.0, AGPS, Canberra.
- Black, F. 1974, 'International capital market equilibrium with investment barriers', *Journal of Financial Economics*, vol. 1, no. 4, December, pp. 337–352.
- Blomström, M. and Kokko, A. 1997, 'How foreign investment affects host economies', *Policy Research Working Paper 1745*, World Bank, Washington DC, March.
- Bond, E. W. and Guisinger, S. E. 1985, 'Investment incentives as tariff substitutes: a comprehensive measure of protection', *The Review of Economics and Statistics*, vol. 67 (1), pp. 91–97.
- Bora, B. 1996, Foreign direct investment, in Bora, B. and Findlay, C. (eds), *Regional Integration and the Asia Pacific*, Oxford University Press, Melbourne.
- Bora, B. and Guisinger, S. 1997, Impact of investment liberalisation in APEC, Flinders University, mimeo.
- Brown, D., Deardorff, A. and Stern, R. 1996, 'Modelling multilateral trade liberalisation in services', *Asia Pacific Economic Review*, vol. 2, no. 1, April, pp. 21–34.
- Brown, D., Deardorff, A., Fox, A. and Stern, R. 1995, 'Computational analysis of goods and services trade liberalisation in the Uruguay Round', in Martin, W. and Winters, L. A. (eds), *The Uruguay Round and the Developing Economies*, World Bank Discussion Paper 307, Washington DC, pp. 365–80.

- Bureau of Industry Economics (BIE) 1995, *Foreign Direct Investment in APEC — A Survey of the Issues*, Report 95/21, AGPS, Canberra.
- Claessens, S. and Rhee, M. W. 1993, 'The effect of equity barriers on foreign investment in developing countries', *National Bureau of Economic Research Working Paper 4579*, Washington DC.
- Commonwealth of Australia 1997, *Going For Growth — Business Programs for Investment, Innovation and Export*, (The Mortimer Report), June, Canberra.
- Corden, M. 1967, 'Protection and foreign investment', *Economic Record*, vol. 43, pp. 209–232.
- Costello, P. (Federal Treasurer) 1997, Release of the report of the Financial System Inquiry and initial Government response on mergers policy, Press Release, 9 April.
- Deardorff, A. and Stern, R. 1997, *Measurement of Non-tariff Barriers*, OECD Economics Department Working Papers No. 179, OECD, Paris.
- de Brouwer, G. 1997, 'Interest parity conditions as indicators of financial integration in East Asia', *Pacific Economic Papers*, no. 268, June, Australia Japan Research Centre, Canberra.
- Dee, P., Geisler, C. and Watts, G. 1996, *The Impact of APEC's Free Trade Commitment*, Staff Information Paper, February, AGPS, Canberra.
- DFAT 1997, *Trade in Services Australia 1995–96*, Canberra.
- Donovan, D. and Mai, Y. H. 1996, 'APEC trade liberalisation: the impact of increased capital mobility', *Australian Commodities*, vol. 3, no. 4, December, ABARE, Canberra, pp. 520–526.
- Economist Intelligence Unit Australia 1996, *Australia's Foreign Investment Challenge: The Harsh Reality — A Foreign Investor Perspective on Australia*, EIU Australia, Melbourne.
- Financial System Inquiry 1997, *Final Report*, April, Canberra (The Wallis Report).
- Foreign Investment Review Board (FIRB) 1996, *Annual Report 1995–96*, AGPS, Canberra.
- Francois, J., Arce, H., Reinert, K. and Flynn, J. 1996, 'Commercial policy and domestic carrying trade', *Canadian Journal of Economics*, vol. 29, no. 1, February, pp. 181–98.

- Guisinger, S. 1989, 'Total protection: a new measure of the impact of government interventions on investment profitability', *Journal of International Business Studies*, Summer.
- Hertel, T. (ed) 1997, *Global Trade Analysis: Modeling and Applications*, Cambridge University Press.
- Hoekman, B. 1995, 'Assessing the General Agreement on Trade in Services', in Martin, W. and Winters, L. A. (eds), *The Uruguay Round and the Developing Economies*, World Bank Discussion Paper 307, Washington DC, pp. 327–364.
- Hoekman, B. and Braga, C. 1997, Protection and trade in services, *Policy Research Working Paper 1747*, World Bank, Washington DC.
- Hufbauer, G. C. 1996, 'Surveying the costs of protection: a partial equilibrium approach', in Schott, J. J. (ed.) *The World Trading System — Challenges Ahead*, Institute for International Economics, Washington DC, December.
- Industry Commission (IC) 1995a, *Assistance to Agricultural and Manufacturing Industries*, Information Paper, AGPS, Canberra.
- 1995b, *Annual Report 1994–95*, AGPS, Canberra.
- 1996a, *Annual Report 1995–96*, AGPS, Canberra.
- 1996b, *Implications for Australia of Firms Locating Offshore*, Report no. 53, AGPS, Canberra.
- 1996c, *State, Territory and Local Government Assistance to Industry*, Draft Report, July, Canberra.
- International Monetary Fund (IMF) 1996a, *Balance of Payments Statistics Yearbook 1996*, Part 1, Washington DC.
- 1996b, *Balance of Payments Statistics Yearbook 1996*, Part 2, Washington DC.
- Leamer, E. E. 1988, 'Measures of openness', in Baldwin, R. E. (ed.) *Trade Policy Issues and Empirical Analysis*, University of Chicago Press, Chicago and London, pp. 147–200.
- Low, P. and Subramanian, A. 1995, 'TRIMs in the Uruguay Round: An unfinished business?', in Martin, W. and Winters, L. A. (eds), *The Uruguay Round and the Developing Economies*, World Bank Discussion Paper 307, Washington DC.
- MacDougall, G. D. A. 1960, 'The benefits and costs of private investment from abroad: a theoretical approach', *Economic Record*, March, pp. 13–35.

- Markusen, J. R. 1995, 'The boundaries of multinational enterprises and the theory of international trade', *The Journal of Economic Perspectives*, vol. 9, no. 2, pp. 169–189.
- Markusen, J. R., Rutherford, T. F., and Hunter, L. 1995, 'Trade liberalisation in a multinational dominated industry', *Journal of International Economics*, vol. 38 (1–2), February, pp. 95–117.
- Martin, W. and Yanagishima, K. 1993, 'Concerted trade liberalisation and economic development in the Asia-Pacific region', background paper for *East Asia's Trade and Investment*, World Bank, International Economics Department, Washington, DC.
- McKibbin, W. J., and Wilcoxon, P. J. 1996, 'The role of services in modelling the global economy', *Asia Pacific Economic Review*, vol. 2, no. 2, August, pp. 3–13.
- Organisation for Economic Cooperation and Development (OECD) 1995, *International Direct Investment Statistics Yearbook 1995*, OECD, Paris.
- 1996a, *Market access after the Uruguay Round: investment, competition and technology perspective*, OECD, Paris.
- 1996b, *International Direct Investment Statistics Yearbook 1996*, OECD, Paris.
- Pacific Economic Cooperation Council (PECC) 1995, *Survey of Impediments to Trade and Investment in the APEC Region*, PECC, Singapore.
- Petri, P. A. 1997a, 'Foreign direct investment in a computable general equilibrium framework', paper prepared for the conference, *Making APEC work: economic challenges and policy alternatives*, 13-14 March, Keio University, Tokyo.
- 1997b, *Measuring and comparing progress in APEC*, Brandeis University, mimeo.
- Saxonhouse, G. R. and Stern, R. M. 1989, 'An analytical survey of formal and informal barriers to international trade and investment in the United States, Canada and Japan', in Stern, R. (ed), *Trade and Investment Relations Among the United States, Canada and Japan*, University of Chicago Press, Chicago.
- Stulz, R. M. and Wasserfallen, W. 1995, 'Foreign equity investment restrictions, capital flight and shareholder wealth maximisation: theory and evidence', *The Review of Financial Studies*, vol. 8, no. 4, pp. 1019–57.

United Nations Conference on Trade and Development (UNCTAD) 1994, *The Tradeability of Banking Services — Impact and Implications*, United Nations, Geneva.

— 1996, *World Investment Report 1996: Investment, Trade and International Policy Arrangements*, United Nations, New York and Geneva.

United Nations Centre on Transnational Corporations (UNCTC) 1992, *The Determinants of Foreign Direct Investment: A Survey of the Evidence*, UN, New York.

United States International Trade Commission (USITC) 1995, *General Agreement on Trade in Services: Examination of Major Trading Partners' Schedules of Commitments*, Washington, DC.

World Bank 1987, *World Development Report 1987*, Oxford University Press, New York.

— 1996, *World Development Report 1996: From Plan to Market*, Oxford University Press, New York.

World Trade Organization (WTO) 1996, *Annual Report 1996*, Geneva.