



Australian Services Trade in the Global Economy

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Foreword

This report presents an in depth analysis of the importance of services in the Australian economy, the regulatory environment for services in Australia and the performance of Australian services trade internationally. It builds on the OECD's 2016 publication *Services Trade in the Global Economy*, and its findings and recommendations that national administrations should consider adopting whole-of-government strategies to capitalise on the demonstrated potential of co-ordinated services trade policy and regulatory reforms to help make trade work for all.

The scope and parameters of this report were defined by the Department of Foreign Affairs and Trade (DFAT). The research and analysis was conducted by the Trade in Services Division of the OECD, employing in-house tools such as the Services Trade Restrictiveness Index (STRI) and measurements of value-added trade (TiVA), drawing from organisation-wide sectoral expertise and developing new micro-data evidence in conjunction with the Australian Bureau of Statistics (ABS). Quantitative findings were complemented by qualitative input gathered during a series of structured interviews in August and September 2017 facilitated by DFAT and the Australian Services Roundtable.

We hope the evidence presented in this report is useful in informing a strategic discussion among Australian policy makers and exporters on the likely effects of co-ordinated domestic policy action, priorities for promoting behind-the-border regulatory reforms in strategic international markets, and the benefits of an ambitious bilateral, plurilateral and multilateral trade policy agenda that contributes rules-based certainty and predictability to services trade in the global economy.

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Abbreviations

ABLIS	Australian Business License Information Service
ABS	Australian Bureau of Statistics
ACCC	Australian Competition and Consumer Commission
ACIFTA	Australia-Chile Free Trade Agreement
ANZCERTA	Australia-New Zealand Closer Economic Relations Trade Agreement
APRA	Australian Prudential Regulation Authority
AUSFTA	Australia-United States Free Trade Agreement
Austrade	Australian Trade commission
ChAFTA	China-Australia Free Trade Agreement
CRICOS	Commonwealth Register of Institutions & Courses for Overseas Students
DET	Department of Education and Training
DFAT	Department of Foreign Affairs and Trade
DoHA	Department of Home Affairs
EBOPS	Extended Balance of Payments Services
ELICOS	English Language Intensive Courses for Overseas Students
EPCM	Engineering, Procurement, Construction Management
FATS	Foreign Affiliate Trade Statistics
FDI	Foreign Direct Investment
FIRB	Foreign Investment Review Board
FTA	Free Trade Agreement
GATS	General Agreement on Trade and Services
HFC	High-Fibre Co-axial (telecommunication technology)
ICT	Information and Communications Technology
ITSS	International Trade in Services Statistics
JAEPA	Japan-Australia Free Trade Agreement
KAFTA	Korea-Australia Free Trade Agreement
LMT	Labour Market Test
MAFTA	Malaysia-Australia Free Trade Agreement
Mbps	Megabits per second
MCI	Mining Contribution Index
METS	Mining, Equipment, Technology and Services

MNE	Multinational enterprise
MRA	Mutual Recognition Agreement
NBN	National Broadband Network
OECD STRI	OECD Services Trade Restrictiveness Index
OECD-WTO TIVA	OECD-WTO Trade in Value Added
PAFTA	Peru-Australia Free Trade Agreement
R&D	Research and Development
RCA	Revealed Comparative Advantage
RTO	Registered Training Organisation
SAFTA	Singapore-Australia Free Trade Agreement
SME	Small and Medium-sized Enterprise
TAFE	Technical And Further Education
TAFTA	Thailand-Australia Free Trade Agreement
TSS	Temporary Skill Shortage
TTMRA	Trans-Tasman Mutual Recognition Act
VET	Vocational and educational training
WHO	World Health Organisation
WTO	World Trade Organisation

Executive summary

The ongoing structural transformation towards a services economy, across all countries and at all levels of development, has immense potential to improve the well-being of Australians. Technology has reduced trade and transaction costs for both goods and services, thereby facilitating more complex and services-intensive production networks. Telecommunications, audio-visual and computer services constitute a digital network at the heart of the world trading system. Transportation, courier, logistics and distribution services form the backbone of global supply chains. Legal, accounting, insurance and banking services are essential enablers of trade and finance. Architectural, engineering, mining and constructions services are a fundamental foundation of physical infrastructure. Health, education and tourism services are at the heart of better lives.

Yet impediments to services trade remain pervasive, while trade and regulatory policy in these individual services sectors are often made with limited regard for economy-wide impacts. This report aims to provide a better understanding of Australia's services performance in the global economy, to inform trade and regulatory policy makers of the likely effects of unilateral or concerted reforms and to help prioritise policy action. Taken together, the main findings seek to contribute to a national strategy by which Australia can fully capitalize on the strength of its services sectors and exporters to ensure that services trade works for all Australians.

Main findings

Services are Australia's gateway to global markets

Australia's regional and global services trade and productivity performance is strong. Services exports, and services embedded in other exports such as food products, machinery and electronics, account for half of Australia's exported domestic value added. There is evidence, however, that Australian services suppliers face increasing competition. As such, a national services trade strategy can help sustain and strengthen Australia's comparative advantages.

Australia's services regulatory environment is a source of strength

Australians benefit from an open, efficient and generally pro-competitive regulatory environment that is favourable relative to many of its peers. Australia's domestic regulatory regime is more liberal than average in 21 of the 22 services sectors measured by the OECD Services Trade Restrictiveness Index. There is scope for improvement in all sectors, however, and a targeted regulatory reform agenda can ensure that Australia's business environment remains a source of international competitiveness.

Global services sector growth is an opportunity for Australians

Technical progress, urbanisation and fast-growing markets are driving a rising share of services in consumption across the globe, and Australian exporters are well positioned to capitalize on these trends. Rapid change and dynamic demand factors, however, require adaptation and new approaches to maintain existing strongholds and gain ground in new and diversified markets, especially in strategic sectors such as education, travel and tourism services.

Ambitious services trade policy can transform bottlenecks into gateways

Services trade restrictions and regulatory heterogeneity impose costs on services and manufacturing sectors, with a disproportionate burden falling on small and medium sized enterprises (SMEs). Enhanced commercial opportunities for Australian exporters can be secured by concerted efforts to encourage behind-the-border regulatory reforms in key markets (through fora such as the G20 and APEC), coupled with an ambitious trade negotiating agenda to secure new market access and bind applied regulatory regimes.

Strategic national reforms can boost Australia's services trade competitiveness

Services generate more than two-thirds of global gross domestic product (GDP), attract over three-quarters of foreign direct investment (FDI) in advanced economies, employ the most workers, and create most new jobs globally. The OECD recommends that countries adopt a whole-of-government approach to co-ordinated services trade policy and regulatory reforms as a driver of inclusive economic growth and employment, and encourages Australia to seize this opportunity. Horizontal and sector-specific policy conclusions are presented in the final chapter of this report.

Chapter 1. The importance of services in the Australian economy

Chapter 1 assesses the role of the services sector within the overall economy of Australia. It presents a statistical overview and breakdown of the Australian sector, identifying the sectors and partner countries that most contribute to Australia's services trade balance and setting out the main drivers of Australia's services growth, competitiveness and productivity.

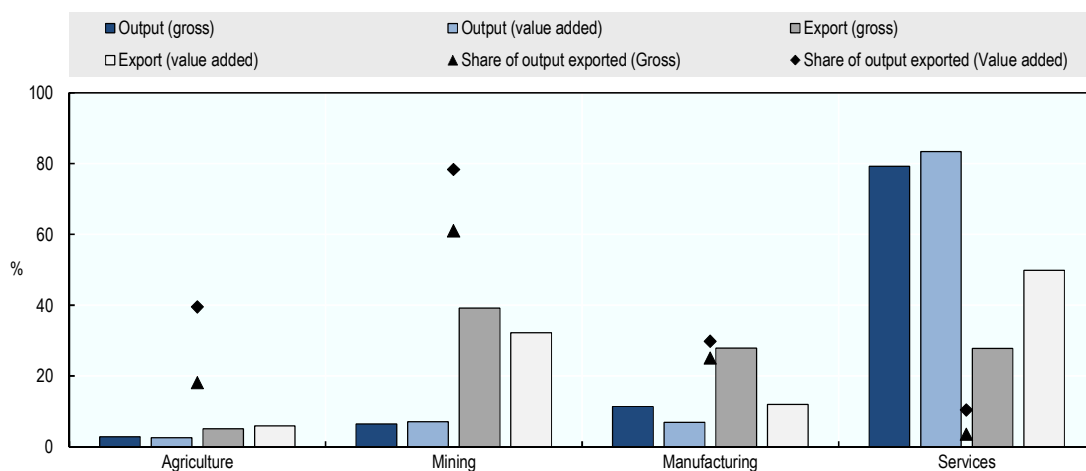
Australia's services industries are a key driver of economic growth and competitiveness

The importance of services in the Australian economy reflects its level of development, sectoral strengths and geography. Economic development is associated with a structural transformation from agrarian to industrialized economies in which the services share of GDP increases over time and as incomes rise. The case of Australia reflects this experience.

Size and international orientation of Australia's services sector

The contribution to Australia's total production and export of the services sector differs significantly from that of the agriculture, mining and manufacturing sectors. As in other industrialised economies, services account for about 80% of Australia's domestic production, both in gross and value added terms (Figure 1.1).¹ Yet, since only 3.6% of the services produced in Australia (valued in gross terms) are exported – far less than for agriculture (18%) and manufacturing (25%) – services account for a little over a quarter of Australia's total gross exports. The largest contribution to Australia's gross exports comes from the mining sector (60% of production exported), which amounts to nearly 40% of total gross exports (mainly exports of iron ore and coal).

Figure 1.1. Production and export shares (%), 2014-2015



Note: The “Agriculture” aggregate in Figure 1.1 includes Forestry and Fishing; whereas the “Mining” aggregate covers Fuels. More detailed data in Annex C, Table C.1.

Source: Own calculations on ABS, Australian National Accounts: Input-Output Tables, 2014-15, catalogue.

However, since services are often used as intermediate inputs in producing goods that are then exported, services contribute indirectly to Australian gross exports of other sectors. Taking this contribution into account reveals that half the value added of goods and services exported by Australia originates in domestic services sectors, followed by mining (32%), manufacturing (12%) and agriculture (6%).²

Table 1.1 compares each sector's contribution to Australia's production and trade with that in other OECD countries in 2014.³ It should be borne in mind that the share of a sector's output that is exported tends to be lower the larger the domestic market and as the country's geographic remoteness increases.⁴

Table 1.1. Comparing Australia against OECD average: Production and export shares

In value added terms, 2014

Sector	Share of production			Share of export			Share of output exported		
	AUS	OECD	OECD non-EU	AUS	OECD	OECD non-EU	AUS	OECD	OECD non-EU
Total economy							17.5	19.6	15.0
Goods	16.7	18.8	19.1	48.5	40.9	43.5	50.5	41.3	33.3
Agriculture, hunting, forestry and fishing	2.8	1.7	1.8	5.3	2.4	2.5	33.5	27.6	23.7
Mining and quarrying	5.8	2.0	2.7	30.4	5.4	7.5	91.8	49.7	40.0
Manufacturing	8.2	15.1	14.8	12.7	33.1	33.4	27.1	39.9	31.8
Services	83.3	81.2	80.9	51.5	59.1	56.5	10.8	15.3	11.4
Electricity, gas and water supply	2.0	2.1	1.9	1.4	1.8	1.3	12.5	20.5	12.7
Construction	8.2	5.2	5.1	2.3	1.0	0.7	4.8	4.4	2.4
Wholesale and retail trade; repairs	10.1	11.2	11.5	14.5	16.3	16.7	25.1	30.3	23.8
Hotels and restaurants	2.5	2.9	2.8	1.7	1.9	1.7	12.0	13.7	10.3
Transport and storage	5.2	4.4	4.2	8.8	8.1	8.0	29.5	38.5	32.0
Post and telecommunications	2.2	2.2	2.5	1.4	1.5	1.4	10.9	16.4	10.1
Financial intermediation	8.8	6.9	7.6	4.4	6.3	6.3	8.6	19.3	13.7
Real estate activities	13.7	11.1	10.9	3.9	3.0	2.5	5.0	6.1	4.1
Renting of machinery and equipment	0.6	0.8	0.8	0.7	1.6	1.8	21	37.3	32.3
Computer and related activities	2.8	2.1	2.0	1.5	2.1	1.8	9.1	21.3	14.9
R&D and other business activities	7.7	9.0	8.9	7.1	11.8	10.8	16.0	27.9	20.1
Public admin. and defence; compulsory social security	4.6	6.8	7.0	0.6	0.7	0.7	2.4	2.5	1.9
Education	4.8	5.1	5.0	2.4	0.8	0.8	8.8	2.9	2.4
Health and social work	7.0	7.2	6.8	0.1	0.2	0.2	0.2	0.9	0.9
Other community, social and personal services	3.0	3.9	3.7	0.9	2.1	1.7	4.9	12.4	8.0
Private households with employed persons	0.0	0.2	0.1	0.0	0.0	0.0	-	0.2	0.3

Note: The OECD average includes 35 OECD countries, weighted by total value added. To reduce the bias caused by different sector weights, the OECD's share of output exported is calculated using Australian sector weights at the most disaggregated level of the TiVA database. *Note:* data reported in this table are not directly comparable with those reported in Table C.1 in Annex C (based instead on the ABS Input Output tables).

Source: Own calculations based on OECD-WTO Trade in Value Added (TiVA) database (June 2017).

The Australian economy produces and exports more in primary sectors (especially mining) and less in manufacturing than does the average OECD country. In fact, the services sector absorbs a larger share of domestic production in Australia and is more oriented towards the domestic market than in all other OECD countries. This pattern occurs in most services categories, and particularly so for financial intermediation and business services (including professional services), which have been growth areas of advanced economies' services trade. However, output shares exported in sectors linked to the visitor economy are comparable with non-EU OECD averages.⁵ The relatively strong performance of Australia's education sector is particularly notable.

The smaller share of services sector output exported by Australia compared with the rest of the OECD area emerged in the early 2000s and the gap has widened in recent years. In

fact, this share in value added terms was higher for Australia (about 13.5%) than for the average OECD non-EU country (about 10%). Since then, however, exported output shares for the OECD country group have gradually increased, except for a small dip associated with the financial crisis in 2008-09, whereas for Australia the share has fluctuated around a slight downward trend, reaching about 11% in 2014 compared with over 15% for the OECD area. This trend merits further investigation.⁶

Services traders are Australia's gateway to the world

Direct services exports and imports

Australia's official trade statistics record the main contributors to direct exports and imports of services over time.⁷ They cover all economic transactions that occur between residents and non-residents, but exclude services delivered by Australian subsidiaries or branches established overseas or foreign counterparts established in Australia, respectively, as they are considered resident enterprises. Thus, Mode 3 (of the four "Modes of supply" defined in the GATS, see Box 1.1), is excluded. Moreover, so too are situations (under Mode 4) where natural persons become residents of the Australian economy.⁸

Figure 1.2 plots Australia's trade in services in 2000 and 2016, broken down into seven main services sector aggregates: transport, business travel, education-related travel and other personal travel services, business services, finance and insurance services and other services.

Box 1.1. Modes of supply in the General Agreement on Trade in Services (GATS)

The GATS recognises four categories of services trade, depending on the territorial presence of the supplier and the consumer at the time of the transaction:

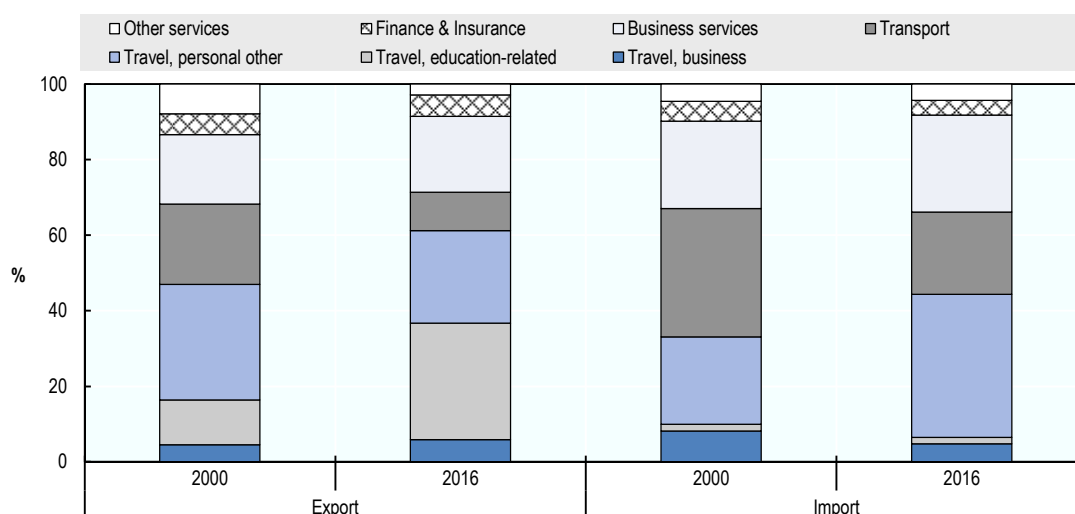
Mode 1: Cross-border (from the territory of one country into the territory of another country). Example: users in country A receive services (such as consultancy or market research reports, tele-medical advice, distance training) from abroad through the telecommunications or postal network.

Mode 2: Consumption abroad (in the territory of one country to the service consumer of another country). Example: nationals of country A travel abroad as tourists, students, or patients to consume the respective services.

Mode 3: Commercial presence (by a service supplier of one country, through commercial presence, in the territory of another country). Example: the service is provided in country A by a locally established affiliate, subsidiary, or office of a foreign-owned and -controlled company (bank, hotel group, etc.)

Mode 4: Movement of natural persons (by a service supplier of one country, through the presence of natural persons of a country in the territory of another country). Example: A foreign national provides services in country A as an independent supplier (e.g. consultant, health worker) or employee of a foreign service firm (e.g. workers in hospital, construction company, etc.).

Source: GATS (1994).

Figure 1.2. Australia's trade in services by main aggregate (%), 2000-2016

Note: The “Business services” aggregate includes: Manufacturing services on physical inputs owned by others; Maintenance and repair services n.i.e.; Charges for the use of intellectual property n.i.e.; Telecommunications, computer, and information services; and Other business services. The “Other services” aggregate is composed of Construction; Personal, cultural, and recreational services; and Government goods and services n.i.e.

Source: Own calculations on OECD International Trade in Services Statistics by Partner Country (ITSS), EBOPS 2010.

In 2016, Australia’s largest service export was *travel services*, valued at AUD 43.6 billion (Figure 1.2, left side). *Travel services* can be further broken down into *business travel* (6%), *education-related travel services* (31%) and *personal-related travel services* (24%).⁹ The latter reflects tourism and health-related travel. *Travel services* have always been an important component of Australia’s total services export; their importance has increased further in recent years, from 47% of total services exports in 2000 to over 60% in 2016. *Education-related travel*, which covers all expenditure by non-resident students, including tuition fees and course materials, grew the most, from AUD 4 billion in 2000 to nearly AUD 22 billion in 2016.

The second largest exporting category after *travel services* is *business services*, accounting for 20% of total services exports in 2016, up from 18% in 2000. The largest contributors to this category are *other business services* (professional services and management consulting, technical and trade-related services, and other business services), and *telecommunication, computer and information services*. *Financial services* accounted for nearly 6% of total services exports in 2016, one percentage point higher than in 2000. Exports of *transportation services*, by contrast, declined from 21% of total services exports in 2000 to 10% in 2016.

Figure 1.2 (right side) shows that *travel services* are also an important component of services imports, with a 44% share (worth AUD 34 billion) in 2016, mostly reflecting the expenditure by Australians travelling abroad (i.e. *personal-related travel*, accounting for 38%). Other significant import categories are *business services* and *transport services*, with 26% and 22% of total services imports, respectively; with shares shifting over time from the latter to the former. Finally, imports of *financial services* accounted for 4% of total services imports in 2016, more than one percentage point less compared to the share

in 2000. Growth of imported *travel services* follows the same pattern observed on the export side, with an increase in import shares from 33% to 44% between 2000 and 2016.

Indirect services exports

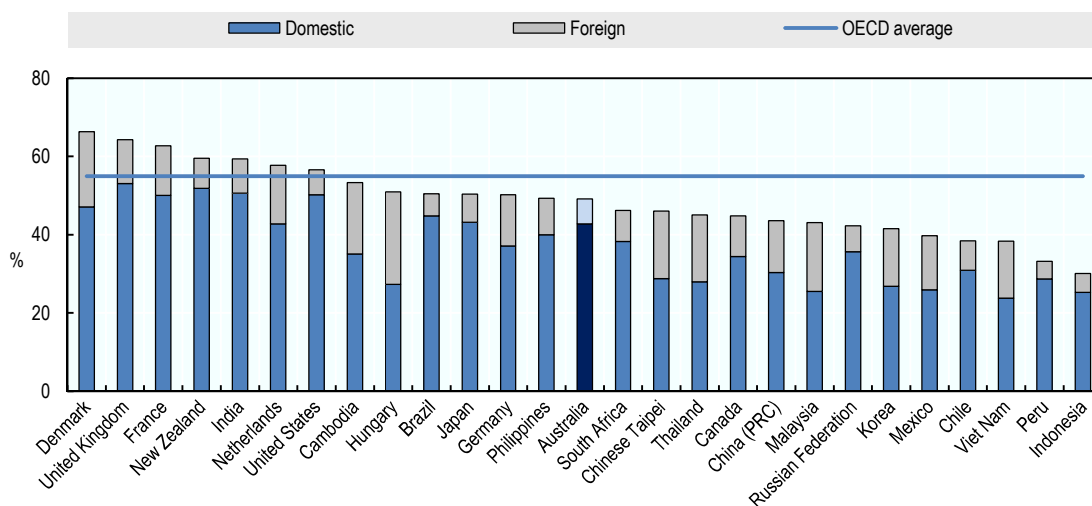
Gross trade flows do not fully capture the international dimension of the Australian services sector. In 2014, services value added contributed to half of Australian total gross exports (Figure 1.3). Although below the OECD average (55%), the Australian service share of gross exports was still higher than in other resource-intense economies like Canada, Chile, Indonesia, Peru, the Russian Federation and South Africa. Australia also had one of the highest domestic services content of gross exports, highlighting a lower degree of dependence on foreign services inputs.

Regarding exports of manufactured goods alone, 40% of their total value reflected services sector value added, marginally above the OECD average (38%). Most of this services content was value added sourced domestically. At the individual sector level, the service content of exports was highest in the *Pulp, Paper and Printing* industry with over half its value (53%) reflecting services value added, well above the OECD average (Figure 1.4). The next highest shares of services value added were found in the *Electronic Machinery* (46%) and *Motor Vehicles* (45%) industries. For most categories of manufactured exports, a high share of the services value added came from wholesale and retail trade, transport and business services.

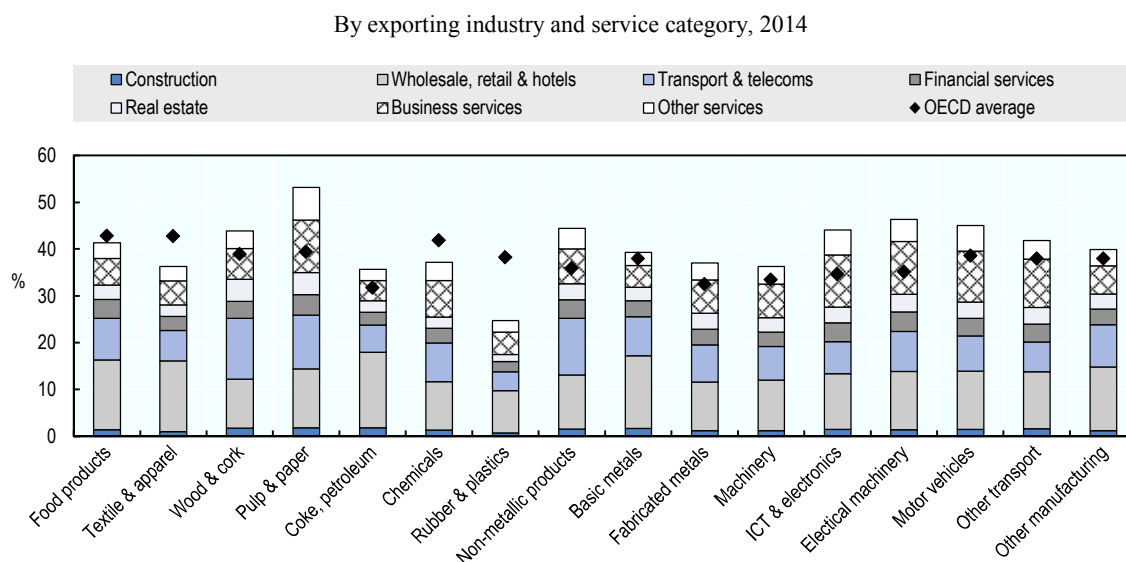
A clear picture of the value added to output and exports by Australia's services industries is crucial for understanding their full contribution to export performance. Moreover, tracing inter-sectoral linkages is essential when analysing services-related policies and their effects on the Australian economy. Input-output analysis has been used to do this, thus shedding light on which export sectors most depend on upstream services inputs.¹⁰

Figure 1.3. Services content of gross exports by country

In value added terms, 2014



Source: Own calculations based on OECD-WTO TiVA database (June 2017).

Figure 1.4. Australia's services content of gross manufactured exports

Source: Own calculations based on OECD-WTO TiVA database (June 2017).

Industries that export services indirectly as intermediate inputs can be identified by following the domestic supply chains forward to the point of export. Table 1.2 shows the decomposition of the total value added exported in 2014-15. In the Australian economy, 46% of all domestic value added in goods and services sold to foreign markets represents intermediate inputs from other industries (sum of the indirect value added exports in the last four columns of Table 1.2). For example, only 27% of the value added by the goods-producing sector that is exported reflects the value added embodied in parts and components sold to other domestic industries further down the value chain. By contrast, indirect exports account for 66% of all services value added that is exported; this reflects intermediate services supplied to domestic downstream firms selling abroad. In other words, Australian services are primarily sold abroad as intermediate inputs into other exported products.

The last four columns of Table 1.2 break down the indirect contribution of value added according to the sector exporting the product at the end of the domestic value chain. The mining sector is the largest indirect exporter of services, with 22% of exported services value added being embodied in mining products. Roughly speaking, mining exports incorporate half of all exported construction services value added, one-third of all exported value added of financial services and one-quarter of all exported value added from professional and technical services. This reflects the importance of large-scale construction works, financial resources and highly specialised engineering services involved in mining activities. Other services-producing industries account for 21% of exported services value added upstream, due to their high reliance on ICT services as well as administrative and support services, followed by the manufacturing industry (19%) and lastly, the agriculture, forestry and fishing industry (3%).

Table 1.2. Export of domestic value added (%), 2014-15

Industry	Direct value added exports (share of total value added exports in %)	Indirect value added exports by exporting industry (share of total value added exports in %)			
		A	B	C	D-S
Total economy	53.7	2.7	14.6	16.9	12.1
Goods	73.0	2.0	7.4	14.8	2.8
Agriculture, forestry and fishing	40.6	12.0	2.1	41.0	4.2
Mining	81.4	0.2	7.4	10.2	0.8
Manufacturing	66.4	2.0	10.0	14.1	7.5
Services	34.4	3.4	21.9	18.9	21.4
Electricity, gas, water and waste services	2.7	6.2	27.7	43.0	20.5
Construction	3.5	4.6	48.7	22.6	20.6
Wholesale trade and retail	52.6	3.7	13.4	18.5	11.7
Accommodation and food services	49.9	2.5	13.3	17.1	17.2
Transport, postal and warehousing	72.3	1.0	11.5	7.6	7.6
Information and communication	31.7	2.3	14.8	16.6	34.6
Financial and insurance services	17.3	5.2	32.1	19.7	25.8
Real estate activities	20.8	3.6	23.1	18.2	34.2
Professional, scientific and technical activities	23.0	3.5	26.7	20.2	26.7
Administrative and support services activities	14.2	3.6	21.7	21.8	38.8
Public administration and defence; social security	9.2	2.4	33.8	26.3	28.3
Education	92.9	0.2	2.3	1.8	2.7
Human health and social work activities	67.2	1.2	5.1	15.7	11.0
Arts and recreation services	54.5	1.2	12.3	7.4	24.5
Other services	5.6	3.6	37.1	27.2	26.5

Note: Final exporting industries are defined as follows: Agriculture, Forestry and Fishing (A), Mining (B), Manufacturing (C) and Services (D-S). Percentages reported in the last four columns represent the break-down of the indirect value added exported by industries other than the producing one (in the first column), hence direct value added plus sum of the last four columns equal 100%. Estimates of direct services exports, notably for wholesale and retail activities, also include “indirect” services provided to transport goods to the customs frontier. This reflects differences in basic (factory gate) prices, the price basis for IO tables, and free on board (FOB) export prices.

Source: Own calculations based on ABS, Australian National Accounts: Input-Output Tables, 2014-15, catalogue 5209.0.55.001, Tables 3 and 5.

Inputs contributing to services production

Figure 1.5 shows that 56% of Australian output reflects the primary factors of the producing industry itself. The remaining 44% is value added sourced from upstream industries, over one-third (34%) reflecting domestic intermediate inputs and 10% representing foreign intermediate inputs.¹¹

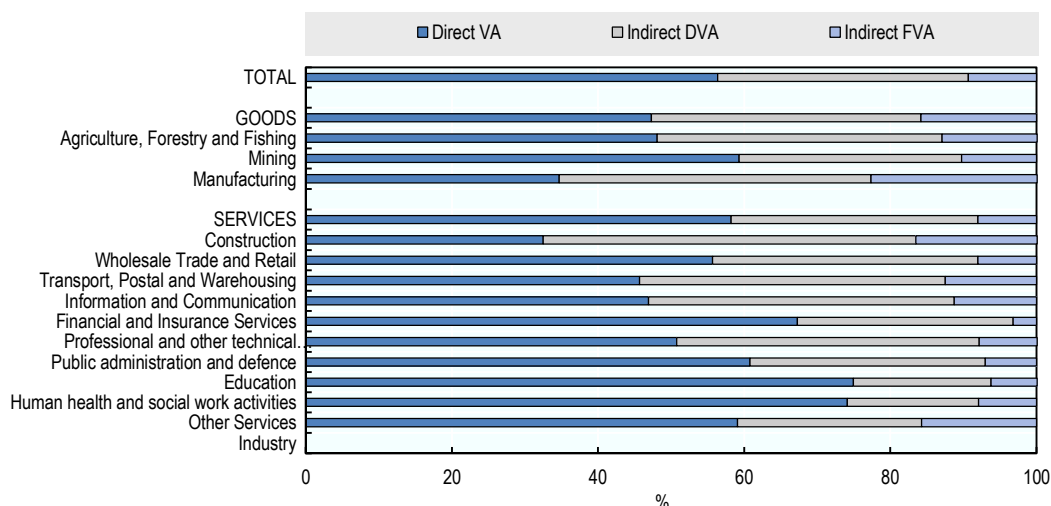
The direct value added share of services output (58%) is higher than in goods-producing industries (47%), although this varies across services sectors. Moreover, services industries use fewer imported inputs than goods-producing industries (8% compared to 16%). Nearly two-thirds of manufacturing value added depend on inputs from outside the sector (with one-fifth imported from foreign suppliers).¹²

Figure 1.6 shows the upstream industries where inputs are sourced, distinguishing between domestic and foreign suppliers. Two striking facts emerge. First, domestic services value chains are important, as local producers in all sectors have strong linkages to upstream services (Figure 1.6, Panel A). For instance, domestic services inputs purchased at various stages of production represent 28% of manufacturing output.

Australian services are also the largest supplier of inputs into the production of other services-producing sectors, mining and agriculture.

Second, services tend to be sourced locally by all Australian industries, while manufacturing inputs tend to be sourced globally. Parts and components that make up a final product, and manufactured products used for services delivery, are largely imported from foreign suppliers (Figure 1.6, Panel B). Foreign manufacturing inputs contribute 6% (in services) and 12% (in manufacturing) of the total value of Australian products.

Figure 1.5. Decomposition of gross output into value added (%), 2014-2015

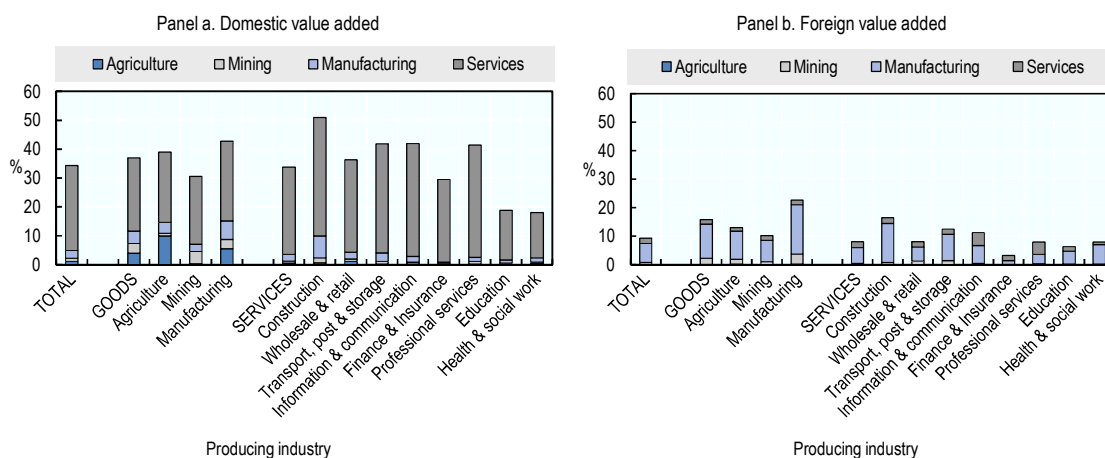


Note: More detailed sectoral information is reported in Annex C, Table C.2. FVA stands for foreign value added (imported inputs) and DVA for domestic value added (domestic inputs).

Source: Own calculations based on ABS, Australian National Accounts: Input-Output Tables, 2014-15, catalogue 5209.0.55.001, Tables 3 and 5.

Figure 1.6. Domestic and foreign intermediate inputs to gross output

By industry, percentage, 2014-2015



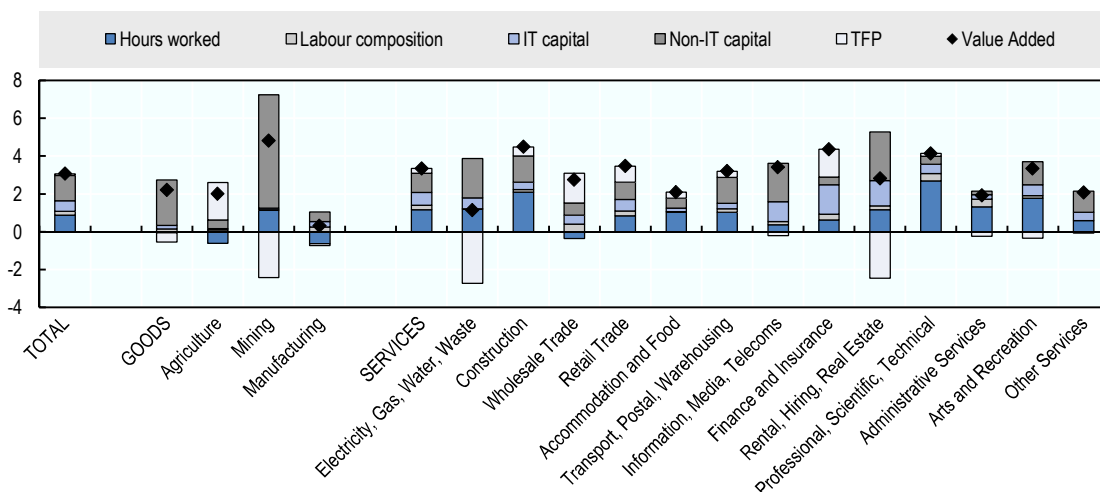
Source: Own calculations based on ABS, Australian National Accounts: Input-Output Tables, 2014-15, catalogue 5209.0.55.001, Tables 3 and 5. For further details see Table C.3 in Annex C.

Services, productivity and economic growth in Australia

Given the importance of services in the Australian economy described above, it is useful for policy-makers to better understand the sources of growth in the services sector and interlinkages to productivity improvements, including the sector's productivity growth comparable with that of other sectors in the Australian economy, and that of services sectors elsewhere in the OECD area.¹³

Figure 1.7 decomposes the average real growth rates for the 17 sectors included in Australia's KLEMS database. Value added, in volume terms, throughout all services industries, was growing at an average annual rate of 3.3% between 2000 and 2015, compared to 2.2% for the goods-producing industry. The average annual growth of value added across the entire economy was 3.1%. Of the annual growth rate in services, 1.2 percentage points (pp) came from additional labour inputs, measured in number of hours; 0.2 pp resulted from a change in the educational composition of the labour force, making workers on average more productive; 0.7 pp came as a consequence of investments in information and communication technologies; 1.0 pp are due to investment in other capital assets, such as office buildings and transport equipment.

Figure 1.7. Decomposition of value added growth, average 2000-2015



Note: Sectors are aggregated into Total, Goods and Services by share of gross value added. For more information on the "growth accounting" methodology, see Annex B.

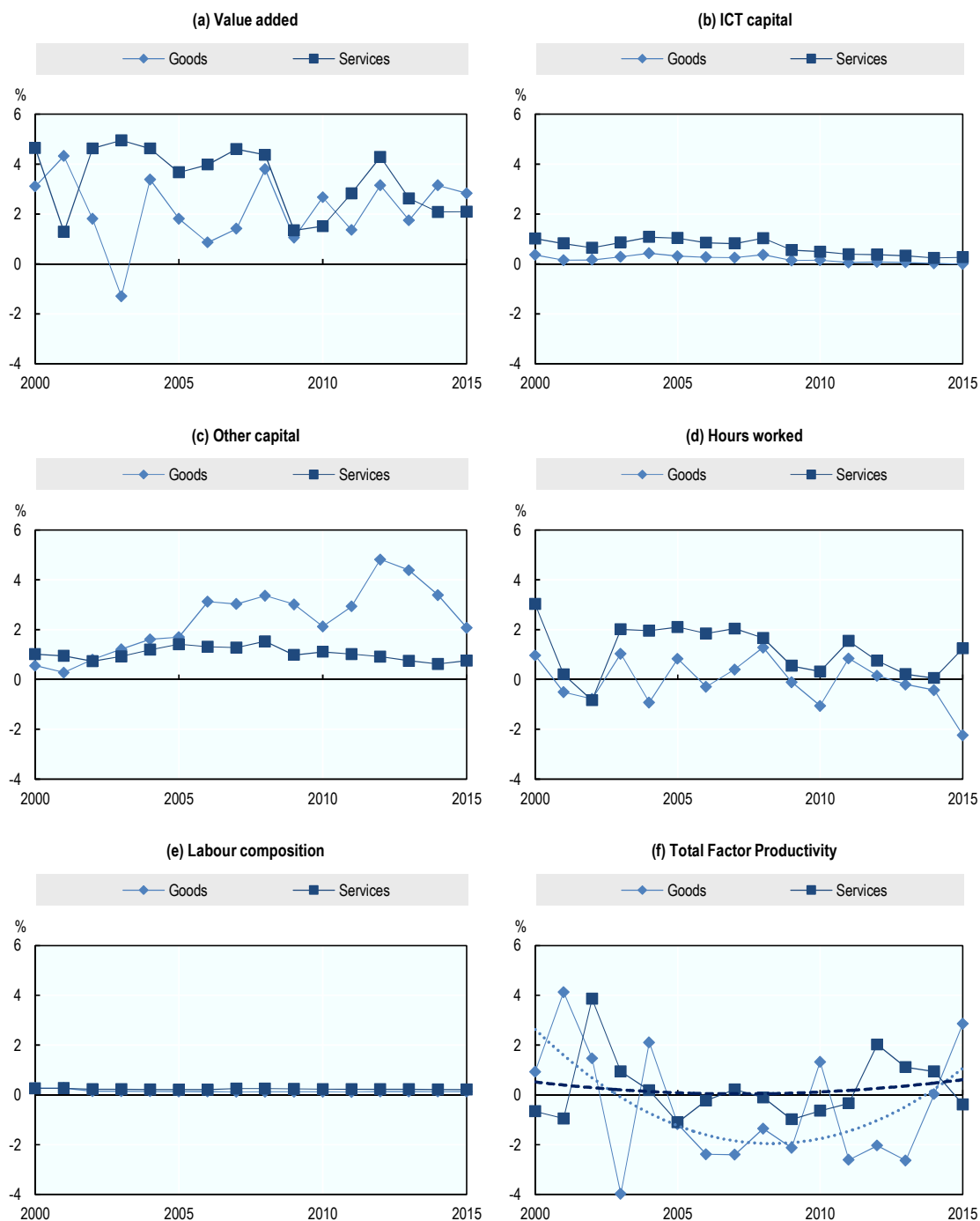
Source: Own calculations based on ABS, Experimental Estimates of Industry Level KLEMS Multifactor Productivity, 2014-15, catalogue no. 5260.0.55.004.

The difference between real value added growth and real growth in inputs of the primary production factors is 0.2 pp, which is attributed to growth of total factor productivity (TFP) in the services sector. Among all services sectors, TFP growth was highest for wholesale trade and financial and insurance services.

Figure 1.8 plots the growth accounting results for 2000-2015, including estimated growth trends (the dotted lines), with goods-producing industries serving as a benchmark. Value added growth in services industries appears to be slowing down, while it is relatively constant or even slightly increasing in goods-producing industries, driven largely by investment in machinery and other non-ICT assets.

Figure 1.8. Decomposition of value added growth

For the goods sector and the services sector, 2000-2015



Note: Growth accounting is done at the sector level and subsequently aggregated into goods or services using the value added shares of the constituent sectors of each aggregate. Dotted trend lines estimated as second order polynomial regression.

Source: Own calculations based on ABS, Experimental Estimates of Industry Level KLEMS Multifactor Productivity, 2014-15, catalogue no. 5260.0.55.004.

Growth rates in inputs of hours fluctuate around zero in the goods-producing industries, while they are slightly positive for services. Changes in the educational composition of the workforce do not have any measurable effect on value added growth. TFP growth fluctuates a lot in both sectors, but even more so in the goods sector than for services. The dotted trend line shows negative growth rates during the global financial crises in 2008-09 and a recovery thereafter, which is particularly pronounced for the goods sector. However, TFP growth in Australian services industries seems to have performed well compared to domestic goods-producing industries.

A comparison of Australia's performance in services with that of other OECD countries produced the following insights.^{14,15} Services value added growth in Australia has consistently outperformed that of the benchmark economies. During the economic crisis of 2009-2010, when services value added growth in the benchmark area became negative, Australia retained a small positive growth rate. However, Australia's strong performance was not due to stronger TFP growth compared to the benchmark economies. Rather, the most important contribution to Australia's value added growth came from growth in the labour supply component, which was positive and higher than for the benchmark group in almost all years during the period under analysis. Other favourable, but less important, contributors to Australia's services growth were investment in ICT capital and in other capital, which were slightly higher than in the benchmark economies in most years between 2000 and 2015, contributing to labour productivity improvements. By contrast, Australia's TFP growth for services overall was similar to that in other OECD countries, although with stronger TFP performance than its peers in some services industries (e.g. finance) and weaker performance in others (e.g. information and communication).

Concluding remarks

Services are a structural driver of Australia's economic growth and competitiveness, and are more important for Australia's international trade than the official trade statistics, expressed in gross values, suggest. In gross terms, the services sector (including construction) contributes about 28% of total exports, whereas in value added terms, allowing for services embodied in other exported products, the services sector accounts for half the exported domestic value added. Yet Australian services are more oriented towards the domestic market, and, with the exception of education, most services export orientation rates remain below those observed in other OECD economies. Foreign services are only of minor importance to Australia's exports. However, there is evidence that Australian services suppliers are starting to face increasing competition, which might negatively affect indirect exports of Australian services value added. However, access to state of the art services, whether local or foreign, is an important factor in enhancing competitiveness in downstream industries.

Overall, Australia's productivity performance is on par with its peers. Policy-makers should be attentive, however, to indications that Australia's relatively strong growth in services value added appears to be conditional on input growth. Moreover, services productivity outperformed goods-producing sectors during 2000-2015. This implies that "push" factors in Australia do provide the necessary support for a strong export performance.

With these findings in mind, chapter 2 examines the regulatory environment for services in Australia and how this relates to trade and productivity performance. Chapter 2 seeks to identify factors within Australia that impact on the competitiveness of Australian firms but also on the participation of foreign firms in the Australian market. Reform in these areas can improve the performance of Australian services and boost the integration of Australian services providers in global value chains.

Notes

1. Specifically, drawing on ABS Input-Output data, 79% of output in gross terms, and 83% in value added terms. In gross terms, the entire value of a production chain is attributed to the final industry of the production chain. In value added terms, only the value generated by a specific industry is considered, whether or not the value remains in that industry or is embedded in the production process of other industries. The value added perspective is closest to GDP shares.
2. The full sectoral decomposition of the 114 sectors of the Australian I-O table is reported in Annex C.
3. Table 1.1 compares each sector's contribution to Australia's production and trade with that in other OECD countries in 2014. It should be borne in mind that the share of a sector's output that is exported tends to be lower the larger the domestic market and as the country's geographic remoteness increases. Table 1.1 shows each sector's share of total domestic value added going in total gross exports. Note that Figure 1.1 and Table 1.1 compare each sector's contribution to Australia's production and trade with that in other OECD countries in 2014. It should be borne in mind that the share of a sector's output that is exported tends to be lower the larger the domestic market and as the country's geographic remoteness increases. Data in Table 1.1 are sourced from different databases. Differences include: Australian I-O data are for fiscal year (2014-15), whereas the OECD-WTO TiVA estimates refer to the calendar year (2014); the sector composition differs: Australian I-O data are more detailed than TiVA data; the Australian I-O data follow the Australia New Zealand Standard Industrial Classification (ANZSIC) 2006, while TiVA data are based on a slightly different industry classification (ISIC, Rev. 3.1).
4. To alleviate these effects of country heterogeneity, figures for non-EU OECD economies (i.e. excluding Australia and the European Union from the group of OECD countries) are also given in the table to provide a more comparable benchmark for Australia.
5. The visitor economy covers activities undertaken by travellers (such as accommodation, restaurants, transport and attractions).
6. The trend between 2000 and 2012 mirrors a concurrent exchange rate appreciation relative to the US dollar. The Australian dollar started to depreciate again in the first half of 2012 and more sharply in the second half of 2014 until January 2016.
7. Trade statistics are sourced from Balance of Payments (BoP) data. The BoP definition of services trade does not include commercial presence abroad. The ABS Balance of Payments statistics follow the Extended Balance of Payment Statistics (EBOPS 2010) classification (see the sixth edition of the IMF's Balance of Payments and International Investment Position Manual (BPM6)).
8. The exclusion of services delivered through a commercial presence abroad means that some services trade may be underestimated in BoP statistics. For example, this might be the case for those financial services where commercial establishment abroad represents the main Mode of entry into foreign markets, and some professional services.

9. *Business travel* covers personal expenditure in the host economy on goods and services by seasonal and other non-resident foreign workers whose main purpose of travel is for business in the economies where they are employed. It might also cover travellers visiting from abroad on a sales trip, market exploration, mission or meeting, to carry out installation work or other such purposes on behalf of a non-resident enterprise. *Education-related travel* refers to all expenditure on tuition, food, accommodation, local transport and health services, acquired by non-resident students. *Other personal travel* covers both health-related expenditure and the expenditure of those travelling neither for health nor for education as their primary purpose. This last category is usually the largest component of travel in other countries (except Australia), as it includes all persons going abroad for holidays, recreational and cultural activities, visits, pilgrimages, etc. For more details see the *Manual on Statistics of International Trade in Services 2010* (United Nations, 2010).
10. Because Australian Input-Output data present exports on the basis of the exporting industry (e.g. exports by the service sector) rather than the exported product (exports of services as in the Balance of Payments), care is needed when comparing data from these two sources
11. Some of the value added embodied in imported inputs may include Australian value added that returns home after foreign processing.
12. Inputs provided by resident foreign affiliates cannot be identified, as I-O tables do not distinguish domestic companies from foreign branches or subsidiaries. Therefore, the share of the domestically sourced inputs that is actually generated by foreign affiliates located in Australia cannot be assessed.
13. The “growth accounting” method underlying the results shown assesses the contribution of an individual input to the growth of output over a given period by multiplying the cost share of the input by the volume growth of that input. Any residual growth in output above the growth in inputs is attributed to general productivity growth, referred to as total factor productivity (TFP). The analysis reported uses KLEMS data, where the acronym stands for the five categories of inputs used in the production process: Capital (K), Labour (L), Energy (E), Materials (M) and Services (S). In KLEMS, intermediate inputs are divided into energy, materials and services inputs. The ABS publishes KLEMS estimates in gross output terms, which can be transformed into value added terms using the value added shares of output. That approach is followed here, since much of the reference data in the literature are in value added terms. Furthermore, the benchmarking exercise with OECD countries also requires growth accounts expressed in value added terms (to date, the only available growth and productivity accounts from EU KLEMS).
14. Detailed results available in the Annex.
15. The benchmark group consists of Austria, Denmark, Finland, France, Germany, Spain, the United Kingdom, and the United States. Complete time series were available only for these countries in the EU KLEMS database (September 2017) at the time of writing.

References

- GATS (1994), “General Agreement on Trade in Services”, 15 April 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1B, 1869 United Nations Treaty Series 183.
- United Nations, Department of Economic and Social Affairs, *Manual on Statistics of International Trade in Services 2010*, UN Publishing, New York.

Chapter 2. The regulatory environment for services in Australia

Chapter 2 examines the measures affecting foreign investment and trade found in Australia's domestic regulatory regime. The chapter presents a short introduction of the OECD's Services Trade Restrictiveness Index (STRI) and a brief methodological overview of the project, and draws on the indices and database to benchmark Australia's regulations in strategic services sectors relative to those of other countries.

Barriers to foreign firms competing in Australia may restrict not only imports but also exports of services. Moreover, domestic consumers may be harmed by import barriers if domestic services sectors are not as competitive as they could be. This chapter reviews the main policy-induced barriers faced by foreign services providers in Australia, benchmarking the Australian regulatory environment relative to that of other similar economies in order to identify potential gains from aligning services policies to best-practice regulations. These measures are assessed using the OECD Services Trade Restrictiveness Index (STRI).

Introducing the OECD STRI

The OECD STRI is an evidence-based diagnostic tool that provides an up-to-date snapshot of regulations affecting services trade in 44 countries and 22 sectors, representing over 80% of global services trade (Box 2.1). The STRI suite of tools includes: i) a regulatory database compiled by the OECD and based on laws and regulations in force; ii) composite indices taking values between zero (complete openness to trade and investment) and one (total market closure to foreign services providers), that quantify the measures identified; and iii) an online, interactive policy simulator that allows the user to compare selected countries with one another and to simulate potential policy reforms. It captures barriers to services trade on a multilateral level, without taking into account free trade agreements or conditions applying on a preferential basis.

General regulatory environment

An open market for trade in services

Australia has a lower than average STRI score in 19 out of 22 sectors for 2017, in line with its favourable general regulatory environment. In Figure 2.1 the indices are separated into five policy areas, reflecting different types of restrictions and Modes of supply. Considering trade restrictions on a non-preferential basis, Australia still maintains some limitations to services trade and investment. For instance, foreign workers seeking to provide services in Australia on a temporary basis may only be recruited if granted visas specific to certain types of occupation, which are subject, among other things, to there being no suitably qualified and experienced Australian candidate available to take up the advertised position. The current analysis relies on the regulation in force in 2017 covered by the OECD STRI regulatory database. The visa considered at that time was the Temporary Work (Skilled) visa program (subclass 457), later abolished and replaced by the Temporary Skill Shortage (TSS) visa program (subclass 482) – see Box 2.2.¹

Labour market tests (LMTs) apply both to skilled workers sponsored by a local business to fill certain occupations for a period of up to two or four years and to highly skilled workers employed for a shorter period to perform non-ongoing work.^{2,3} By design, such labour market tests require that businesses look first to the domestic labour market before seeking to employ an overseas skilled worker. While they do not prevent businesses (both foreign and domestic) from accessing pools of foreign candidates, they do represent a barrier to services trade in that LMTs add an additional layer of regulatory burden in the recruitment of highly qualified foreign professionals for a limited period of time.^{4,5}

Furthermore, the *Corporations Act 2001* requires that a least one board member must be resident in Australia. This requirement might constrain companies' choice when appointing directors and impede full control of their businesses, particularly for SMEs, which have smaller governing bodies.

Box 2.1. The OECD Services Trade Restrictiveness Index

The OECD STRI brings together information from more than 16 000 laws and regulations for 22 sectors in 44 countries. These are the 35 OECD countries and Brazil, the People's Republic of China, Colombia, Costa Rica, India, Indonesia, Lithuania, the Russian Federation, and South Africa. The STRI tools allow the identification of potential regulatory bottlenecks and the benchmarking of regulation to global best practices. The information collected in the regulatory database is summarised by composite indicators, with values ranging from zero (complete openness to trade and investment) to one (total market closure to foreign services providers). The regulatory information is organised under five policy areas.

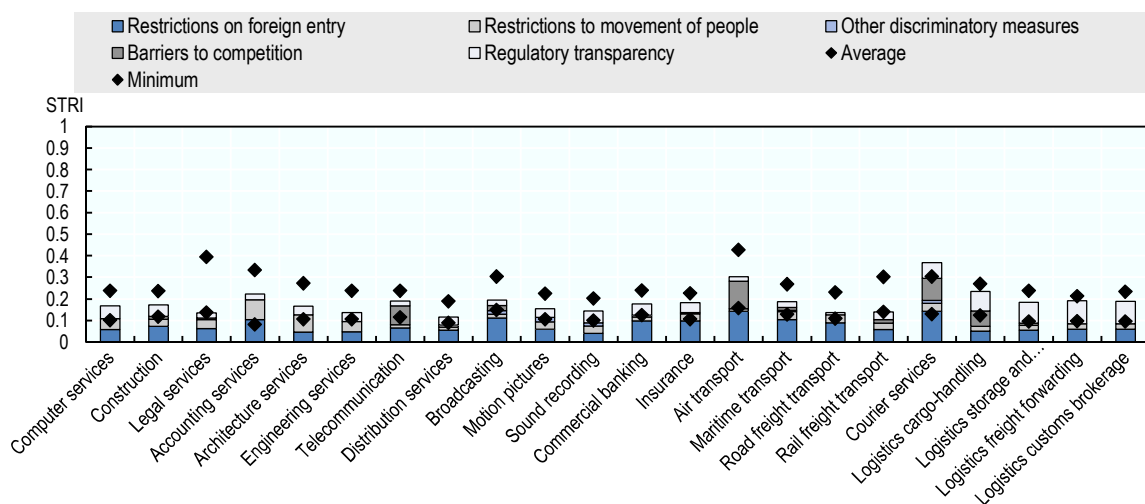
- *Restrictions to foreign entry*, including, *inter alia*, information on foreign equity caps, nationality and/or residency requirements for board of directors and managers, foreign investment screening, etc.
- *Restrictions on movement of people*, encompassing key restrictions to the movement of foreign services providers such as quotas, labour market tests, limitations to duration of stay, and lack of recognition of foreign qualifications.
- *Other discriminatory measures*, comprising discrimination of foreign services providers with respect to taxes, subsidies and public procurement participation.
- *Barriers to competition*, including information on anti-trust policy, government ownership of major services providers and whether these are exempt from competition law and price regulation.
- *Regulatory transparency*, recording information on consultation and publication of laws and regulation prior to entry into force, and excessive red tape in the form of burdensome administrative procedures related to the establishment of a company, obtaining a license or being granted a business visa.

While the first three policy areas cover measures that are typically related to market access and national treatment, the last three look at behind-the-border restrictions, largely found in domestic regulation. Within each policy area, a core set of measures is reported for all sectors; these are complemented by sector-specific measures reflecting the nature and market structure of each sector.

The OECD STRI regulatory database records laws and regulations enforced at the national level. However, in federal states, the regulation may vary considerably across states, provinces or regions. In such cases, one representative state is selected, based on its economic importance. In Australia, New South Wales has been chosen as the representative state.

Some foreign investments are also subject to screening in Australia. Under the *Foreign Acquisitions and Takeovers Act 1975* (FATA), screening broadly applies to natural persons as well as to foreign governments and entities, acquiring a substantial interest (at least 20%) in an Australian entity valued above AUD 261 million.⁶ Approval is also needed for certain types of foreign investment involving business and land (commercial, agricultural, mining or production) acquisitions.⁷ The Act empowers the Treasurer, advised by the Foreign Investment Review Board (FIRB), to decide, on a case-by-case basis, when a particular investment would be contrary to the national interest, based on certain criteria.⁸ This form of discretion could possibly have a dissuasive impact on foreign investment by increasing the administrative burden and the level of uncertainty for potential foreign investors in services sectors. However, efforts are made to increase certainty for investors, for instance via publication of guidance and ministerial statements outlining factors that will be taken into account in considering the national interest.

Figure 2.1. Australia's STRI score, by sector and policy area



Note: The STRI takes values between zero and one, one being the most restrictive. The indices rely on the STRI regulatory database described in Box 2.1. Air transport and road freight cover only commercial establishments (with accompanying movement of people).

Source: OECD STRI database, 2017.

Business visa conditions also matter for the general competitiveness of a country. Australia has a range of visa options for short-term business visitors. Two business visa options are available for passport holders of a number of countries: the e-Visitor visa (subclass 651) or the Electronic Travel Authority visa (subclass 601).⁹ These two visa types are processed in less than one day, applications can be lodged online free of charge, and allow short-term business visits (typically up to three months) to make general business enquiries, conduct negotiations, sign or review business contracts, etc. Other nationals can enter the country under the business stream of the Visitor visa (subclass 600).¹⁰ While it is possible to submit an application online for the Visitor visa, visa processing time is between 9 and 20 days and the application procedure requires between 13 and 17 separate documents for a cost that varies between AUD 140 (USD 109) and AUD 1 020 (USD 797).

Australia does not impose on business visitors mandatory appointments for pre-approval prior to visa application, in-person biometric enrolment for Australia's major markets (e.g. China and India), or extensive original documentation. Australia also offers a range of long-validity visa options in key markets, as well as trials of priority consideration services. Asia-Pacific Economic Cooperation (APEC) Business Travellers generally receive a standard six year validity Australian business visitor visa.¹¹

Further simplifying visa procedures by making them more readily available to a wider range of nationalities while still respecting risk management principles, can benefit foreign services providers and Australian companies) (Box 2.3).

Box 2.2. Changes to the Temporary Work (Skilled) visa (subclass 457)

On 18 April 2017, the Government announced a package of reforms to their immigration policy including the replacement of the Temporary Work (Skilled) visa (subclass 457 visa) by the Temporary Skill Shortage (TSS) visa. Implementation of these reforms commenced already on 19 April 2017 and was completed by March 2018. New applications, and pending applications lodged before April 2017, are affected by this reform.

The new TSS visa program consists of a Short-Term stream of up to two years (four years, where required under an international trade obligation), and a Medium-Term stream of up to four years. The Short-Term stream is designed to fill short-term skill gaps with foreign workers, on a temporary basis, and is renewable only once onshore (unless an international trade obligation applies), although subsequent renewals are possible via offshore application. The Medium- to Long-Term stream aims at addressing skill gaps over the medium to longer term. Renewal onshore is also possible for this stream and a permanent residence pathway is allowed after three years. There is also a Labour Agreement stream, for employers that wish to sponsor skilled overseas workers and have already entered into a labour agreement with the Australian Government. The main changes introduced by the reform are listed below:

- A consolidation of the occupation lists: The occupation lists underpinning the 457 visa program have been significantly condensed.¹ Both the Short-term Skilled Occupations List (STSOL), the Medium- and Long-term Strategic Skills List (MLTSSL), and the Regional Occupation List (ROL) considered for the new TSS visa, will be subject to regular review to ensure they reflect the skill needs of the Australian labour market.
- More stringent requirements for visa applicants: New applicants must have at least two years' work experience relevant to the particular occupation. Changes also include mandatory skills assessments for regulated occupations, a mandatory penal clearance certificate, and stricter English language requirements with increased English test scores.² The English Language Salary Exemption Threshold (ELSET), which exempted applicants whose salary was over AUD 96 400 from the English language requirement and intra-corporate transferees, has been removed.
- Changes affecting Australian sponsoring companies: Any Australian-based business wishing to bring in foreign workers must still apply for business sponsorship status with the Australian Department of Home Affairs (DoHA). Employers will continue to pay the Australian market salary rate and meet the Temporary Skilled Migration Income Threshold (TSMIT), set at AUD 53 900 as of 18 April 2017. Prospective sponsoring businesses will be subject to a discretionary non-discriminatory workforce test when there is evidence that employers are actively discriminating against Australian workers. Employers will continue to be subject to mandatory labour market testing, unless an international obligation applies.³ Later in 2018, it is expected that sponsors no longer need to meet the current training benchmark requirements but will have to contribute to the new Skilling Australians Fund (SAF).

The new TSS visa program aims to support businesses addressing genuine skill shortages in their workforce whilst, at the same time, safeguarding Australian workers. The new TSS visa is part of the Government's reform package to strengthen the integrity and quality of Australia's temporary and permanent employer-sponsored skilled migration programs. The TSS visa foresees some additional flexibility for intra-corporate transfers and a Global Talent Scheme program for certain sponsors using this visa type. Nevertheless, the proposed Skilling Australians Fund levy, payable at the time the business sponsors an overseas skilled worker, may raise upfront costs for some businesses to employ highly qualified foreign professionals. In addition, smaller enterprises (with fewer than 5 employees and if the nominee is to be transferred to fill the position) are no longer able to sponsor overseas workers in a handful of occupations for a 457 visa program, while medium and larger firms still are.

1. In April 2017, “eligible skilled occupations” were pared down from 651 to 435. As of March 2018, the occupations list contains a total of 509 occupations: 242 on the STSOL, 208 on the MLTSSL, and 59 on the ROL. These three lists replace the former Consolidated Sponsored Occupation List, which underpinned the visa subclass 457 until April 2017. Over the last year, occupations have moved between lists, additional occupations have been included, while a few occupations have been removed. For more details on the current occupation list see: <https://www.legislation.gov.au/Details/F2018L00302>.

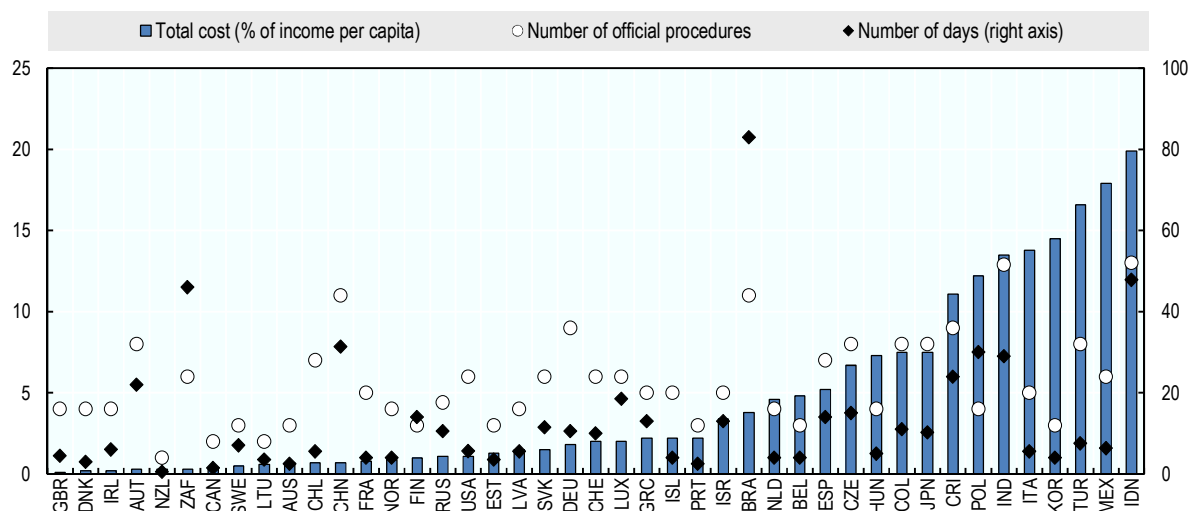
2. English proficiency requirements are not necessary for passport holders from Canada, Ireland, New Zealand, the United Kingdom and the United States, regardless from the salary. Exemptions are also made for diplomatic workers and if the applicant has been educated in English. However, the regulatory body may impose a higher English language standard than is required for visa purposes.

3. Under the World Trade Organisation’s (WTO) General Agreement on Trade in Services (GATS), LMTs have been waived for independent executives, ICTs (such as Executives and Senior Managers) and skilled specialists who have been with their employer in Australia for at least two years. Under the MAFTA and AANZFTA LMT has been waived for all ICTs (Executive and Senior managers, and Specialists) and Independent executives. In ACIFTA, ChAFTA, KAFTA, JAEPA, SAFTA and TAFTA, Australia has also committed to waive LMT for contractual services suppliers, all ICTs, and Independent executives.

Australia has a relatively favourable business environment

When it comes to starting a company, few bureaucratic and legal steps are needed to incorporate and register a new business in Australia (Figure 2.2). It takes around 2.5 days to complete and lodge an application to register a proprietary company in Sydney, requiring on average only three official procedures at minimal cost.¹² Australia comes fourth on these metrics after New Zealand, Lithuania and Canada.

Figure 2.2. Ease of starting a business



Source: World Bank Doing Business indicators (2016).

This encouraging business environment is the product of Australia’s various initiatives to reduce unnecessary red tape and facilitate business start-ups.¹³ Recently, Australia established a one-stop shop, the Australian Business License Information Service (ABLIS), to facilitate business registration and establishment. ABLIS serves as a repository of government licences, permits, approvals, and registrations, codes of practice, standards and guidelines. It has proven very useful to new businesses – especially SMEs – that are spared from long interactions with multiple agencies, often

using different terminologies and relying on different procedures and registration forms (PC, 2015a). ABLIS also enables foreign companies unfamiliar with the various registration requirements to reduce compliance costs.

Box 2.3. Transforming Australia's visa system

Visa reform

The DoHA began with a public consultation on the design elements of the new visa system following a request from the Australian Government in 2017 to make Australia's visa system easier for visitors to understand and navigate, to streamline complex procedures and reduce maintenance costs. The consultation considered: a) reducing the number of visas from 99 at present to approximately ten visas; b) better delineating between temporary entry and long-term/permanent residence; c) the role that a period of provisional residence could play in enhancing the integrity of the visa system and easing the burden on taxpayers; and d) a visa system that would still support Australia as a competitive and attractive destination for temporary and longer-term entrants.

Service delivery reform

The DoHA has already begun work on improving visa services delivery, using the latest digital technologies, in order to respond to growing volumes of visa applications and travellers. The reform also aims at ensuring greater access to online visa products, which will come with the benefit of faster decision-making, and more equitable pricing.

In June 2017, the DoHA issued a market consultation paper to start the process of market engagement. This first consultation aimed to collect views and inputs from different stakeholders, including peak industry bodies, businesses and international partners, to investigate ways to create a more sustainable and efficient visa service delivery model and to explore how new technologies could help design a global digital visa-processing platform. The information gathered was used to inform the next stage of the market engagement process, namely a Request for Expressions of Interest: "Delivering visa services for Australia – Bundle 1" (September 2017). The market engagement will continue until the Government produces a visa simplification reform proposal. In the meantime, all the existing visa settings will remain in place, with no immediate impact for current visa applicants or holders.

The current visa system is quite complex with a large number of visa programs. A reduced number of visa types, with clear and well defined distinctions between temporary and permanent visas, would help Australia to continue attracting the best talents, which would increase business performance and global competitiveness.

Australia has a relatively liberal approach to cross-border data flows compared to some other OECD countries in that it facilitates cross-border disclosures of personal information while safeguarding privacy and security.¹⁴ More broadly, the *Privacy Act 1988*, which includes thirteen *Australian Privacy Principles (APPs)*, sets out standards, rights and obligations for the collection, use and disclosure of personal information by APP entities. The APPs are legally binding principles although they are not prescriptive rules – i.e. each APP entity has the flexibility of tailoring the application of the APPs to its own business model. In particular, APP 8.1 and section 16C of the *Privacy Act 1988* deal with the disclosure of personal information to overseas recipients, and generally require the data sender to take "reasonable steps" to ensure that the cross-border recipient does not breach the APPs in relation to the information.¹⁵ For example, an APP entity could satisfy this requirement by entering into an enforceable contractual arrangement with the foreign entity. Such a contractual arrangement may include for instance a

requirement that the overseas recipient handles the personal information in accordance with the APPs (other than APP 1) and that it takes steps to ensure compliance with the APPs.¹⁶

In addition, section 16C of the *Privacy Act 1988* makes the APP entity accountable for breaches of the APPs by the overseas recipient. This mechanism is intended to help the data subject seek redress in Australia if the personal information is mishandled abroad. There are also some exceptions to APP 8.1 of taking "reasonable steps" and to the accountability principle in Section 16 C of the *Privacy Act 1988*. For instance, the exception applies if a) the data subject consents to cross-border disclosure after being duly informed; b) the cross-border data flow is authorised or required by an Australian law or a court/tribunal order; c) there are mechanisms that the individual can access to take action to enforce that protection of the law or binding scheme; d) the APP entity reasonably believes that the overseas recipient of the information is subject to a law, or binding scheme, that will protect the information in a way that substantially similar to the way in which the APPs protect personal information.

While some of these safeguards can entail additional compliance costs for firms (e.g. in cases requiring a specific enforceable contractual agreement), the data transfer mechanism also ensures that adequate safeguards remain in place for the protection of personal information. Proportionate privacy safeguards are important factors in promoting consumer trust in online transactions, and hence they are important for enabling cross-border trade in a digital environment.

Nonetheless, various countries restrict cross-border data flows by requiring the data to be stored, and in some instances processed, locally. Limitations to cross-border data flows add to companies' operational costs and can severely affect business models. As data transfer has become a key enabler of services exports in many other sectors, restricting the free flow of data across borders might also have considerable implications for trade, particularly in sectors where the collection and processing of personal data is essential (e.g. data flows accompanying international transactions or between MNE headquarters and local affiliates, or collection of client information for marketing purposes). Harmonising the standards and principles for cross-border data transfer would require co-ordinated action at the international level to ensure that inconsistencies among various regulatory frameworks are removed or at least reduced as much as possible.¹⁷ Australia has already sought to facilitate cross-border information flows by including specific provisions in its FTAs. Recent FTAs already include significant provisions on cross-border information flows, disclosure of source codes, localisation of data and computing facilities and a set of factors facilitating e-commerce (e.g. electronic authentication, paperless trading, customs duties moratorium, and domestic regulatory frameworks for electronic transmissions).¹⁸

Sector specific regulation

Turning to sector-specific restrictions, Australia is more restrictive than the STRI average in *Courier and postal services* and close to the average in some *Logistics services*. *Transport* and *Professional services* are also among the most regulated sectors in Australia, with relatively restrictive STRI indicators compared to best practice, although still below average. These services are used throughout the manufacturing process and contribute to improving not only domestic production but also Australia's integration into global value chains. Efficient logistic, transport and courier services are essential for bringing intermediate inputs and final products to their final consumer in domestic or

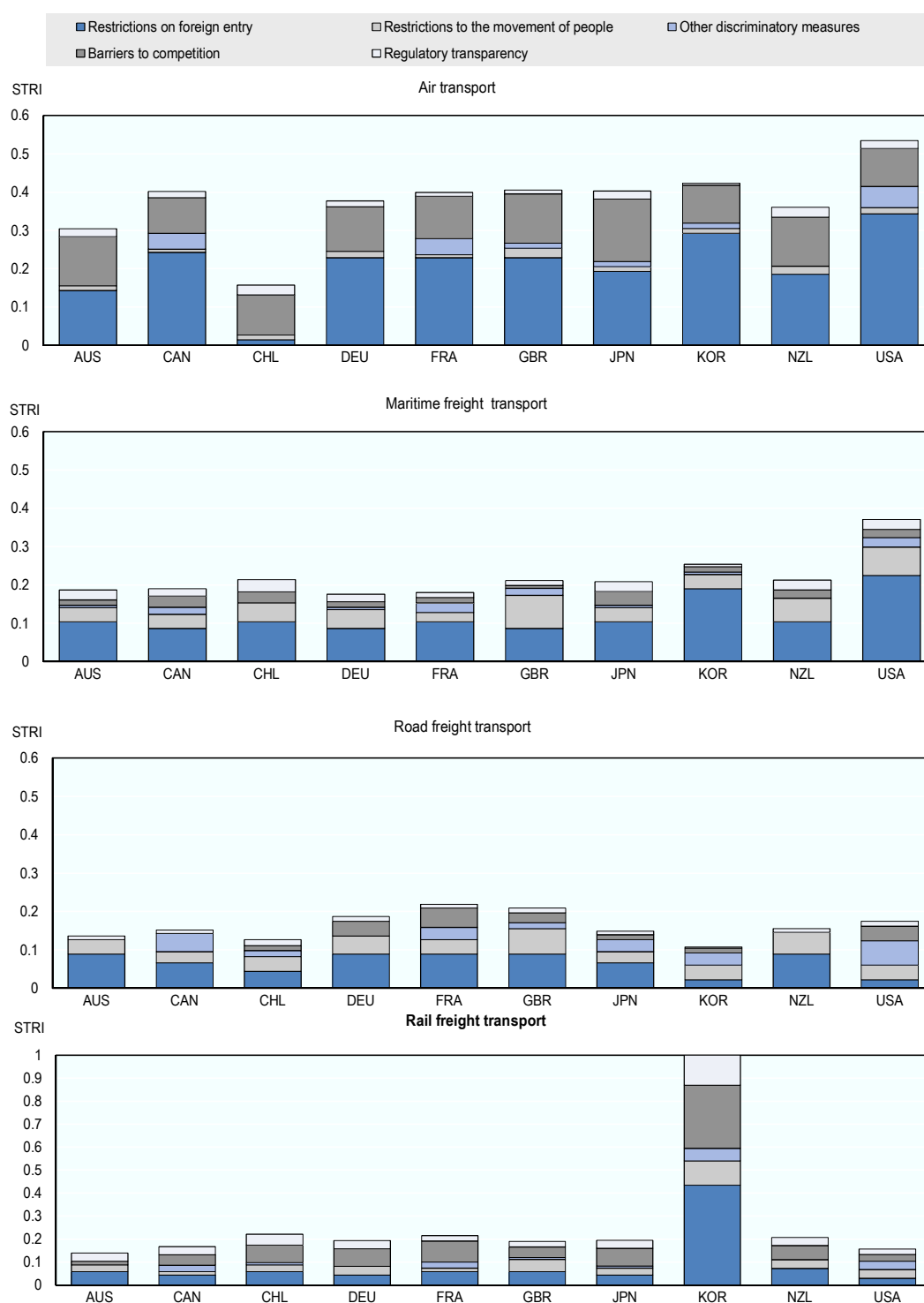
foreign markets. Well-functioning transport and logistic services also help to improve the competitiveness of manufacturing sectors as well as mining and quarrying activities. For instance, in commodity-based industries, cost-effective bulk transport, specialised ports, along with insurance and merchanting services, are essential for bringing raw materials from the mines to their clients. Professional services also support the production value chain at different stages; firms need engineers during the development phase of highly technical and specialised products, and mines need specialised engineers to design and plan mining projects. Firms typically use legal advice and accounting services throughout the production process. These services enhance trade by establishing and enforcing contracts across borders and disseminating information on the financial state of prospective trading partners. Finance and communication play also an important role in coordinating production along the value chain.

The following cross-country comparison of sector-specific regulations offers further insights into the degree of openness of Australia's regulatory environment for each of these services sectors, highlighting, where possible, best-practice regulation among peers. The countries chosen for the comparison share similar characteristics in terms of level of economic development, common language and institutional settings, the economic importance of services, remoteness and relevance of commodity-based markets.

Transport

Figure 2.3 reports the STRI indices for all modes of transport services for Australia and a selected number of countries. In *Air transport*, the level of restrictiveness is relatively high across the board, with the notable exception of Chile, which is considerably more open towards the establishment of foreign air carriers.¹⁹ Australia's regulatory framework is the second most liberal. Contributing to the results are foreign equity limitations for both domestic and international traffic. Australia and New Zealand are the only two countries allowing full foreign ownership of domestic airlines for the purpose of carrying domestic cargoes and passengers.²⁰ However, Australia limits foreign participation to 49% in locally incorporated air carriers operating international traffic.²¹ This means that foreign investors wanting to acquire an existing Australian international airline to operate international flights cannot own more than 49% of the share capital. This is a common restriction across OECD countries, with the exception of Japan and Chile, where foreign airlines can establish a fully foreign-owned company in the country and provide international transport services. The lease of foreign aircraft also remains subject to prior approval in Australia. Moreover, Australia's non-competitive slot allocation (entitlements to use a runway at a given time) in high demand airports favours incumbent air carriers over new entrants.²² Non-competitive slot allocation schemes, coupled with the prohibition of commercial exchange of slots, are important entry barriers for new airlines, as they cannot access the basic airport infrastructure under the same conditions as historic operators.

In *Maritime freight transport*, Australia is relatively liberal compared to the other selected economies (Figure 2.3). Much of Australia's STRI indicator in this sector is due to restrictions to foreign entry. Only Australian-owned vessels (entirely or majority-owned), or vessels on demise charter to Australian-based operators, can be inscribed in the Australian General Shipping Register (AGSR) and fly the national flag.²³ Since only vessels inscribed in such a registry can perform unlimited coastal and intra-state trading, de facto these registration requirements prevent foreign-flagged and owned vessels from accessing this segment of the market, which is not negligible considering the length of Australian coastline.

Figure 2.3. STRI Transport services

Source: OECD STRI database (2017).

Vessel registration is relevant as it can be a way of enforcing restrictions to cabotage. Foreign-flagged and owned vessels are partially allowed in coastal trading if they have a temporary license.²⁴ Such licenses are valid for a limited authorised number of voyages in a 12-month period, allowing foreign vessels to hire foreign crew, conditional on complying with certain Australian employment conditions. A temporary license applicant is also subject to a number of other requirements, including a ‘notice in response system’. The current cabotage regime effectively implies that Australian-owned and operated vessels, as well as domestic crews, enjoy priority status in many areas of operation. Therefore, shipping costs increase due to lack of competition with potential knock-on effects on industries relying on coastal trading.

In addition, the *Shipping Reform (Tax Incentives) Act 2012*, grants a more favourable taxation treatment to operators of Australian registered vessels.²⁵ Part X of the *Competition and Consumer Act 2010* grants an anti-trust exemption for international liner shipping services upon registration of the shipping agreement. Under these provisions, international liner shipping companies enjoy immunity from prosecution for some forms of anti-competitive conducts (e.g. exclusive dealing and price fixing).²⁶

In *Road freight transport*, Australia is relatively liberal and roughly in line with the other countries considered in Figure 2.3.²⁷ Australia applies few barriers to commercial establishment and the accompanying movement of foreign professionals providing these services. Australia’s STRI result largely reflects general regulations that apply equally across all sectors, with very few sector-specific restrictions. One of these is the non-recognition of foreign truck driving licenses for certain vehicles. For instance, New South Wales does not recognise foreign professional qualifications, and drivers of large freight vehicles must undergo a Heavy Vehicle Competency Based Assessment (HVCBA) with an Accredited Training Provider.

In *Rail freight transport*, Australia has a similar regulatory framework to those observed in the other countries. Korea is an exception, with a regulatory regime reflecting a de facto monopoly of the provision of rail freight transport services and no transit/access rights, which results in the sector being completely closed to foreign investment and trade. Conversely, Australia has very few barriers to the establishment of foreign rail undertakings and the movement of providers of rail freight transport services (e.g. freight train drivers, rolling stock technicians, machinists). Australia has an open-access regime, no barriers to entry and allows third parties (whether private or state-owned undertakings) to use existing railway infrastructure in exchange for a regulated track access charge. Australia’s very liberal approach towards rail freight transport services results in a very low score, almost exclusively due to horizontal regulation that applies to all sectors.

Logistics

Logistics services complement air cargo, shipping and trucking in serving the supply chain. Regarding international trade in goods, the process of bringing goods from factory gates across borders and to foreign markets relies heavily on the efficiency of auxiliary services and the speed of clearing customs procedures. The same holds true for agriculture and agro-food exports.

Australia’s STRI indicators for the four logistics services covered by the STRI (cargo handling, storage and warehousing, freight forwarding and customs brokerage) are not low, but are on par with those observed for the other economies (Figure 2.4). Logistics services in Australia are affected by various administrative procedures related to

obtaining licenses/authorisations and business visas. For instance, only Regulated Air Cargo Agents (RACAs), holding an authorisation from the Department Infrastructure and Regional Development in the form of a regulatory notice, can clear, handle and arrange for the transport of international and domestic air cargo.

Customs brokers also need a local license to operate in Australia. Recent policy changes have increased fees and introduced new charges for obtaining, renewing and modifying custom broker licenses. In January 2016, the government introduced an application fee for custom broker's licenses of AUD 300 to AUD 1 300, depending on the specific broker category. Foreign customs brokers, whose foreign qualifications and licenses are not recognised in Australia, are particularly affected by the need to duplicate licensing requirements and pay increasingly burdensome and costly licensing procedures.

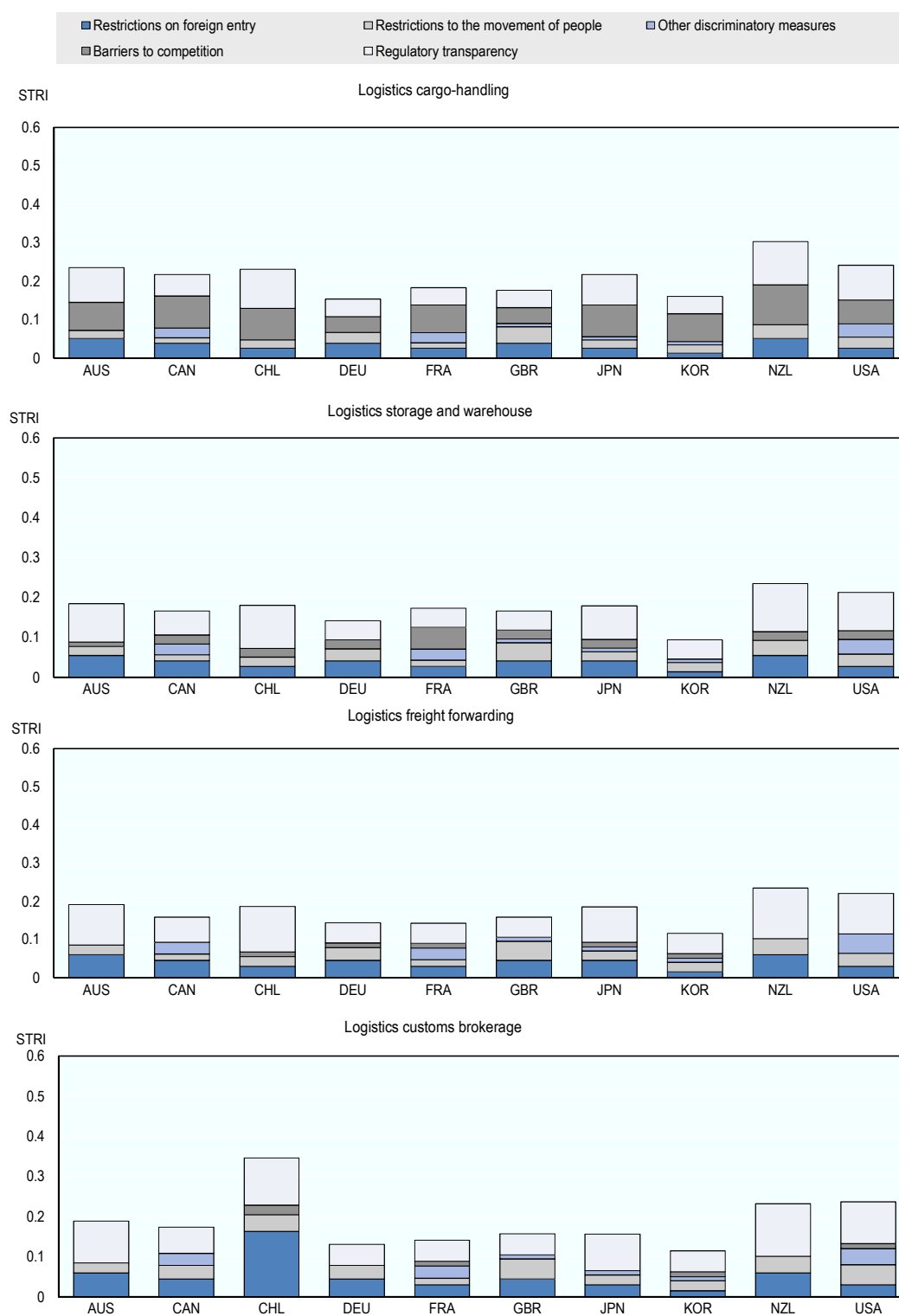
Opening a depot or a bonded warehouse in Australia also requires a specific license. An application fee was also recently introduced for a bonded warehouse license. The fee is about AUD 3 000, and is non-refundable if the application is not successful. These recent changes to licensing charges might raise costs for foreign but also domestic, and especially small, businesses, thereby complicating supply chain management.

Postal and courier services

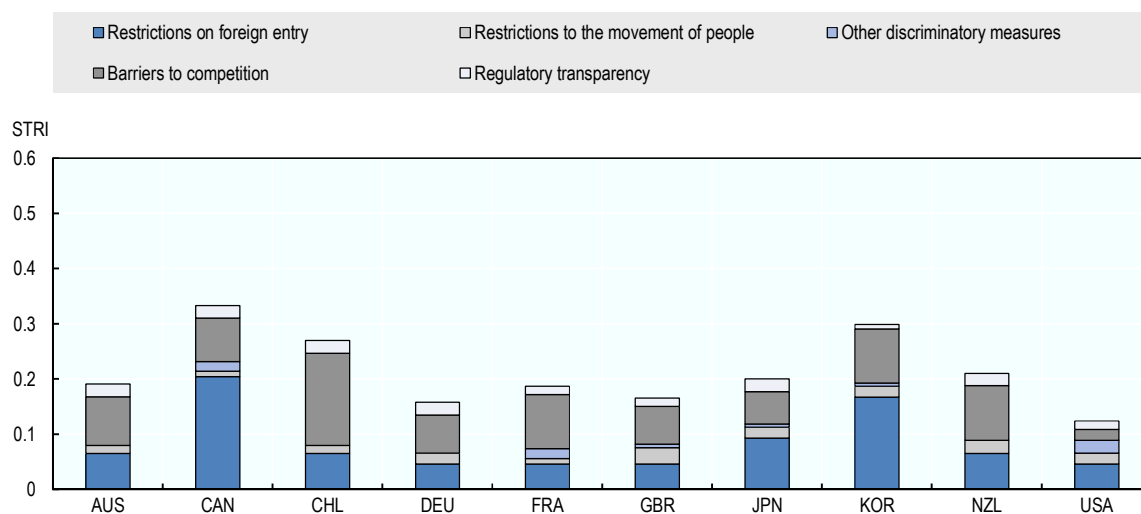
Greater use of modern information and communication technologies, and changes in consumer behaviour have led to a decline in demand for letters services, at least as means of communication. There is still however an important market for business-to-consumer and business-to-business letter mail, including hybrid mail, and delivery of printed materials, newspapers and periodicals. In addition, the rise of e-commerce has expanded parcel delivery, which, together with the increasing importance of global production networks and just-in-time delivery, requires fast and reliable shipments. Courier services, and in particular express delivery services, play a crucial part in modern logistics chains, creating strong complementarities and linkages between courier and transport services.

Postal and courier services have been opened in many countries to private companies, transitioning from statutory postal monopolies to regimes that are more competitive. This has not yet happened for some OECD countries and that explains the relative STRI scores on *postal and courier services* observed in Figure 2.5.

Australia's STRI score mainly reflects the presence of a state-owned postal service monopoly on letters and small packages weighing up to 250 g. In addition, the *Australian Postal Corporation Act 1989* partially exempts the government-owned enterprise Australia Post from applying the general competition law in relation to access to bulk mail services (mostly business related) and incoming overseas mail services. Nevertheless, Australia Post is still subject to the regulatory oversight of the Australian Competition and Consumer Commission (ACCC).²⁸ In addition, being the designated postal operator, Australia Post enjoys a more favourable tax treatment, for instance with respect to stamp duty tax, and is exempt from transport bans.

Figure 2.4. STRI Logistics services

Source: OECD STRI database, 2017.

Figure 2.5. STRI Postal and courier services

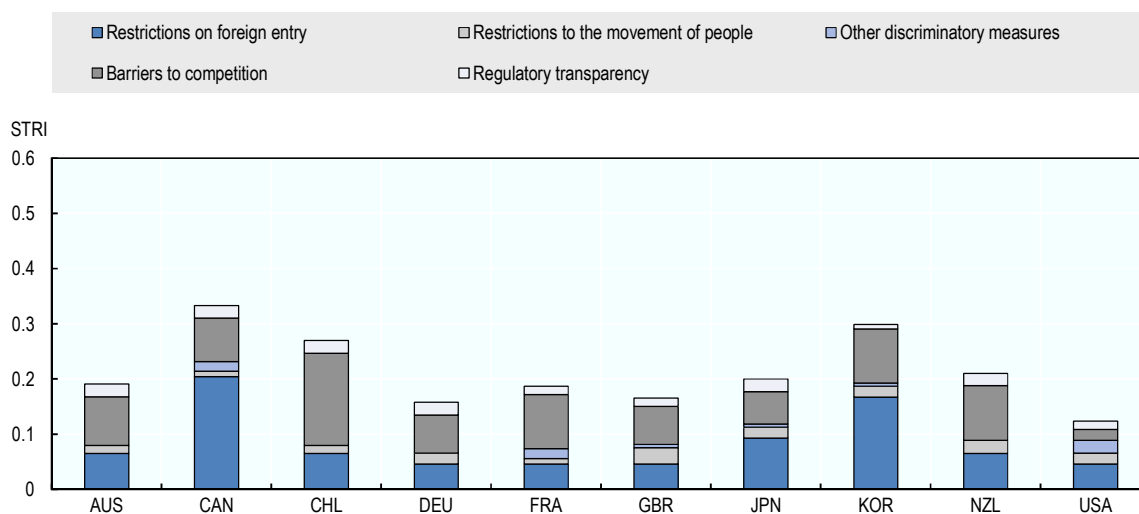
Source: OECD STRI database, 2017.

Telecommunication

Telecommunication services comprise voice and data transmission over fixed and mobile networks. Telecommunications are at the core of the information society and provide the network over which other digitized products are traded. Australia's score on the STRI in telecommunication services compared to some of its international peers is presented in Figure 2.6.

Australia's score mainly reflects restrictions on foreign entry and barriers to competition. Most of the restrictions on foreign entry are attributable to the general regulation related to investment screening, restrictions on board members and acquisition of land. In addition, the National Broadband Network (NBN) Corporation, a statutory state-owned wholesale only broadband network, has a strong market position in wholesale broadband services supply. Several of the other countries also have significant restrictions on foreign entry. Canada and Korea cap foreign equity at 20% and 49% respectively; the United States limits ownership by foreign entities in a common carrier radio station licensee to 20%; Japan and New Zealand limit foreign equity participation in a state-owned supplier and all the countries included in the chart, except Chile, screen foreign investment in telecommunications.

Barriers to competition reflect the extent to which best practice pro-competitive regulation is in place. In cases where one supplier or several suppliers jointly have significant non-transitional market power regulated access to the incumbent's network may be necessary. The purpose of such regulation is to lower barriers to entry for newcomers. Imposing similar access regulation on small and new companies could be overly burdensome for them and offset the pro-competitive effect of access regulation. Symmetric access regulation on the NBN and small entrants contribute to Australia's STRI results in this sector.

Figure 2.6. STRI Telecommunication services

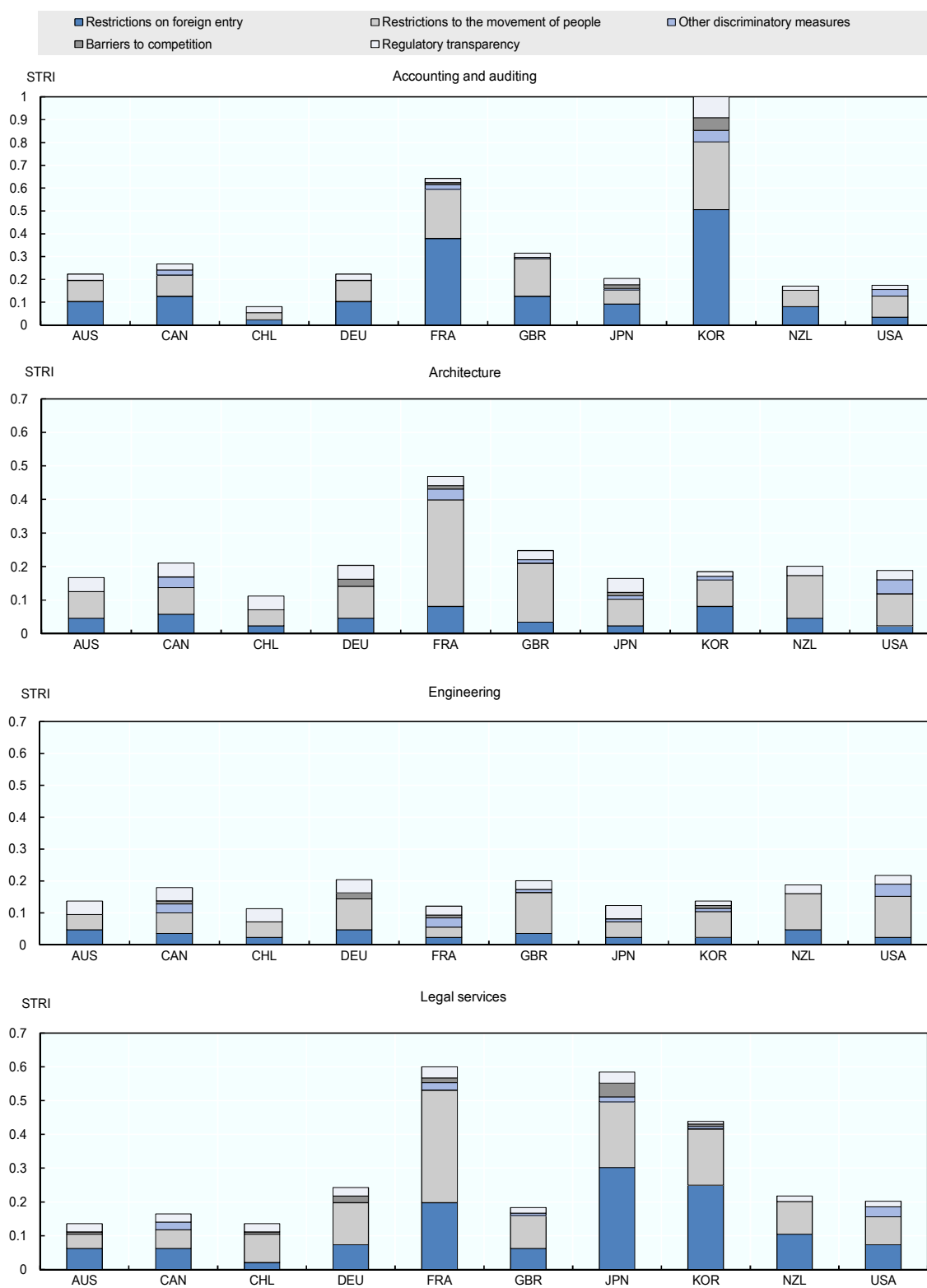
Source: OECD STRI database, 2017.

Professional services

Professional services are relatively open and well regulated (Figure 2.7). Professional services, such as accounting and auditing, legal services, architecture and engineering, are typically highly regulated through professional bodies and organisations that issue licenses and set standards against which they monitor the conduct of professional providers. Non-recognition of foreign qualifications, certificates and previous experience is still widespread and presents major obstacles to foreign professionals' mobility. Nevertheless, Australia encourages and facilitates recognition of qualifications through its FTAs, including by establishing Working Groups on Professional Services.

For *Auditing and accounting services*, Australia's STRI results are more or less on par with those observed in other selected economies (except Chile and Korea). Chile does not regulate accounting and auditing, while Korea is closed to foreign investment and trade.²⁹ Australia's score is due partly to horizontal regulation and partly to sector-specific measures related to licensing procedures and recognition of foreign qualifications. To qualify as an auditor in Australia, registration in the Australian Securities & Investments Commission (ASIC) is required. Foreign qualifications may be recognised by the ASIC on a case-by-case basis, but one year of local practical experience might be required. For accountants, membership in one of three major legally recognised professional accountancy bodies is compulsory to practice.³⁰ Only foreign accountants that are members of a selected number of eligible foreign professional bodies qualify as accredited accountants in Australia.³¹ Foreign professionals that are members of non-recognised professional bodies must be assessed to ensure that they hold equivalent education, training and experience by one of the recognised Australian professional accounting bodies. This might add delays and limit market access for these foreign professionals. Further impediments to foreign investment in auditing businesses come from restrictions on board members and managers, whose majority need to be resident and registered auditors. In addition, foreign accountants and auditors cannot obtain limited or temporary licences to provide accountancy and auditing services in Australia. A fully locally recognised license is required.

Figure 2.7. STRI Professional services



Source: OECD STRI database, 2017.

Conversely, the criteria for recognition of foreign qualifications in *Architecture* are clear and transparent, although a local exam and local practice of one year are required to obtain a license in architecture. Foreign professionals may also provide services based on a temporary license. *Engineering* is not a regulated profession in Australian states except Queensland. Therefore, the STRI score for Australia in this sector reflects the general regulatory framework common to all other services sectors. Architecture and engineering services are less restrictively regulated than legal and accounting services.

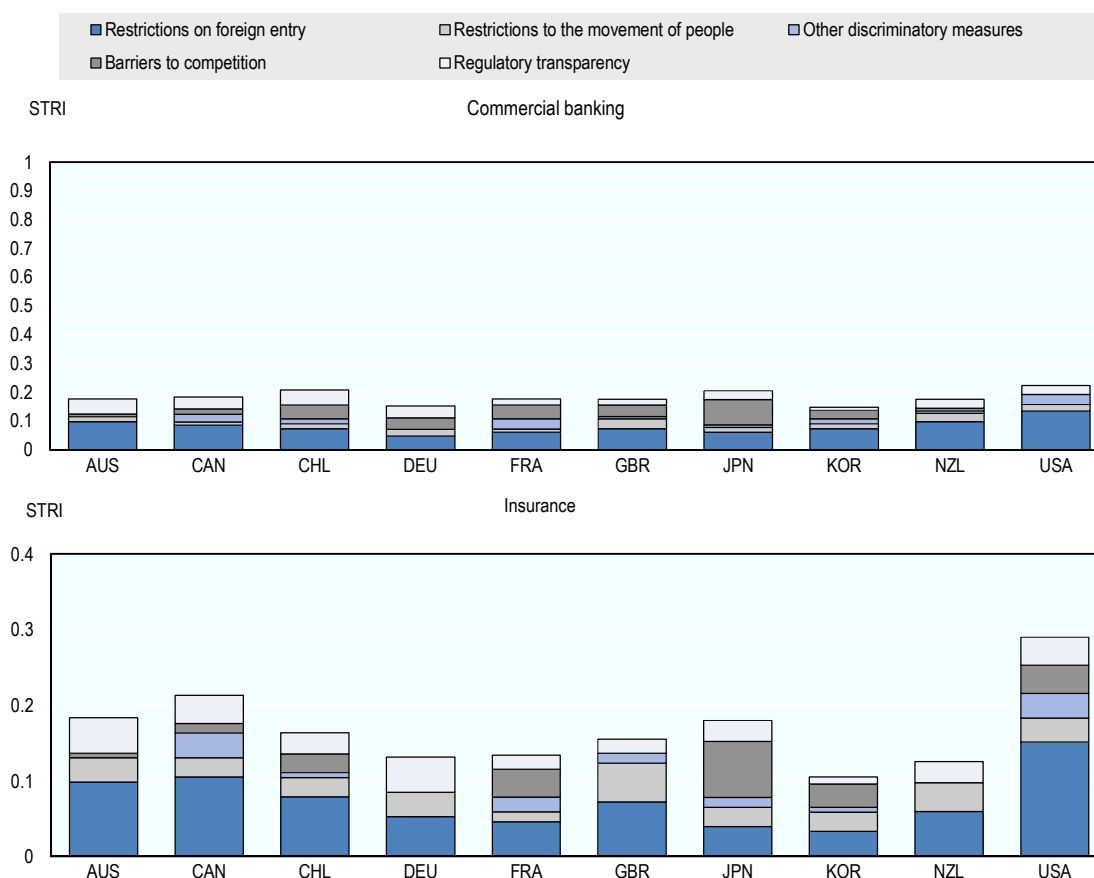
Australia has a relatively low STRI score for *Legal services*, compared to those of the selected countries reported in Figure 2.7. The provision of legal advice in Australia requires a license. More specifically, an Australian Practising Certificate (APC) is necessary to practice domestic law as a solicitor. The relevant professional body must issue this APC; for example, legal practitioners in New South Wales, must hold a current practising certificate issued by The Law Society of New South Wales (NSW). Other states have similar requirements.³² Registration with the Law Society of New South Wales is required to practice the law of a foreign jurisdiction in NSW.³³ Requirements of local certificates and registrations also influence the composition of a law firm's board of directors. In firms practicing domestic law, at least one director must be a resident Australian legal practitioner holding an unrestricted practising certificate. If the law firm specialises in international or foreign law, then at least one of the directors has to be an Australian-registered foreign lawyer. Finally, Australia allows foreign lawyers to visit the country for a temporary period on a fly-in-fly-out basis, to give legal advice on foreign law. The foreign lawyer is not required to be registered in Australia or to have an office in the state or becoming a partner/director of a law firm. Competition between lawyers is influenced by regulations prescribing specific fees that can be charged for the provision of certain types of legal services.

Financial services

Financial services are one of the most heavily regulated sectors around the world. In this environment, it is difficult to disentangle prudential regulations and consumer protection measures from trade-restrictive policies. In many cases, prudential regulation and trade-relevant policies can overlap, requiring the GATS and preferential trade agreements to include a "prudential carve-out".³⁴ The OECD STRI for financial services comprises commercial banking and insurance services as depicted in Figure 2.8.³⁵

Australia's STRI in *Commercial banking services* is among the highest in the group of ten benchmark economies. The score largely reflects restrictions to foreign entry and barriers related to regulatory transparency. Australia's main restrictions on foreign entry relate to cross-border trade in commercial banking services. According to a letter of clarification by the Australian Prudential Regulation Authority (APRA) on offshore banking operations, foreign banks are only allowed to conduct business with Australian counterparts from their offshore offices, if the foreign bank is not actively soliciting business from retail customers in Australia.^{36,37} This condition imposes a restriction on the operations of foreign banks, though a common one among OECD economies, as it implies that cross-border trade in some core banking services is virtually closed for foreign companies without a local establishment in Australia.

Figure 2.8. STRI Financial services



Source: OECD STRI database, 2017.

Australia's regulation in the insurance sector is only slightly more restrictive than for commercial banking services. Nevertheless, Australia's STRI results in *insurance services* are among the three most restrictive economies of the comparative sample. Among the main restrictions to foreign entry, Australia allows cross-border supply only for the reinsurance segment, and for marine, aviation and transport (MAT) insurance services. Moreover, while foreign branches are allowed for non-life insurance, only branches of foreign companies established in New Zealand, the United States, Japan, Korea and the People's Republic of China (hereafter "China") are authorised to offer life insurance services in Australia. Companies from all other countries have to establish a local affiliate in Australia. In addition, APRA imposes a residency requirement for board members and senior managers of Australian insurance companies. Appointed actuaries must be resident in Australia and the recognition of qualifications acquired abroad is limited. Mutual recognition agreements allowing for simplified accession procedures after six months of local practise exist for members of the Actuarial Society of South Africa (ASSA), Canadian Institute of Actuaries (CIA), Casualty Actuarial Society (CAS), Institute of Actuaries of India (IAI), Institute of Actuaries of Japan (IAJ), Institute and Faculty of Actuaries (IFoA), New Zealand Society of Actuaries (NZSA), Society of Actuaries (SoA) and Society of Actuaries in Ireland (SAI). Otherwise, foreign qualified

actuaries are required to practise in Australia or New Zealand for at least three years before being eligible for accredited membership in the Actuaries Institute.

Several policies affect commercial banking and insurance services simultaneously. In a market like the financial services sector with relatively high concentration rates, the enforcement of competition could not be stressed more.³⁸ Australia has good pro-competition practices in the sector, but the full independence of the supervisory authority could be jeopardised by its discretionary funding. According to the *Australian Prudential Regulation Authority Act 1998*, APRA is funded by levies, which must be paid by businesses in the financial services sector. However, the size of these levies in each financial year is determined by government discretion.

According to the *Financial Sector (Shareholdings) Act 1998* a person can generally not own more than 15% of a financial sector company, irrespective of nationality or residence.³⁹ Moreover, the four pillars policy of the Australian Government requires that no mergers or takeovers should occur among the four largest banks in the country (Note 38). Notwithstanding the detrimental effect of anti-competitive regulation, there is an important trade-off between competition in the banking sector and the corresponding risk of financial instability (OECD, 2011; Ratnovski, 2013). Analysis of this trade-off is clearly outside the scope of this study. Nevertheless, best practice suggests that the assessment of mergers and acquisitions should be within the realm of an independent competition or supervisory authority and not in the hands of governments.

APRA has established a new restricted authorised-deposit taking license in Australia, which will be open to new entrants and provide entities two years to integrate themselves in the market before requiring a full banking licence. Nevertheless, further progress in the area of regulatory transparency could be made by streamlining the requirements associated with the licensing procedures and by reducing related uncertainties. No maximum duration exists for decisions on license applications. In addition, there is no regulatory requirement to inform applicants about reasons for the denial of licences. These limitations do not only complicate entry of new competitors, potentially creating rents for incumbent firms, but also represent a possibility for discretionary treatment of foreign suppliers applying for a license to provide services in Australia.

Recently, the government announced its intention to roll out a comprehensive package of reforms to strengthen accountability and competition of the banking system. The package will include, *inter alia*, measures aimed to bolster the surveillance and enforcement powers of the banking regulator (APRA), streamline procedures related to financial disputes, and establish an enhanced regulatory sandbox (“trial environment”) to address barriers to innovation in the financial market. The government has also requested an inquiry into the state of competition of the financial system, due in July 2018. This initiative could result in greater benefits to Australian consumers, but even more so to Australian businesses, whose productivity and international competitiveness could be boosted by having access to a wider variety of financial products of better quality and at lower prices.

Businesses also mentioned the importance of the Asia Region Funds Passport, which has been discussed through the APEC Finance Ministers’ Process (FMP) in recent years and is currently being implemented in Australia, Japan, New Zealand, Korea and Thailand. This initiative is supposed to harmonise regulatory requirements for funds management in participating economies, in order to facilitate cross-border offerings of retail funds. It aims to increase market potential for fund managers in the region, while at the same benefiting investors by increasing choice of investment funds.

Concluding remarks

This chapter demonstrates that Australia's regulatory framework for services is a source of strength for the performance of Australian services in the global economy. After a short discussion of horizontal policies, for example with respect to foreign investment screening, temporary movement of people, cross-border data flows or company registration requirements, it delineates sector-specific regulation for transport services, logistics, postal and courier services, telecommunications, professional services and financial services. The chapter highlights how the regulatory environment for Australian services sectors is generally favourable, efficient and pro-competitive, compared to its peers. However, in each of these sectors there is scope for further improvement. A strategic national approach to targeted regulatory reforms can sustain and strengthen the competitiveness of Australian services.

The next chapter presents Australia's services advantages, considers "pull" factors by delving deeper into the geographical dimension of Australia's services trade (including a benchmarking of export performance) and presents a portrait of Australian businesses engaging in cross-border services exports.

Notes

1. Under the 457 visa, Labour Market Tests (LMTs) were not required for lower skilled occupations (i.e. not ANZSCO level 1 or 2) if the foreign worker being nominated for any given occupation was citizen/national of a group of economies consistent with Australia's international trade obligations (including WTO GATS and FTA commitments); or if the foreign worker was nominated for executive or senior management occupations. Under the 482 visa, all occupations, independently of their skill level, are subject to mandatory LMTs, unless international trade obligations apply.
2. Sponsored foreign workers, with the required skills to fill a position nominated by an approved business, were previously eligible for a Temporary Work (Skilled) visa program (subclass 457). Since April 2017, a foreign worker can stay up to two years, if the occupation is on the Short-term Skilled Occupations List (STSOL), up to four years if the occupation is on the Medium and Long-term Strategic Skills List (MLTSSL), or a period required under an international trade agreement. The foreign worker must have been sponsored and nominated by a business approved by the Department of Immigration and Border Protection (DIBP), met certain English language and skill requirements and any registration/licensing obligations for the nominated occupation (specific occupations might also require a skills assessment). Under the 457 visa, an approved business had to prove that the position had been advertised in Australia for a period set out in a legislative instrument (for applications lodged before June 2018, the period was set to 12 months). Furthermore, 457 visa holders could have worked only for the sponsoring employer, except for general managers (and some medical practitioners), who could have worked, in their nominated position for employers other than their sponsors. For the purpose of the OECD STRI, the 457 visa was considered the relevant visa type in 2017 for all services providers planning to work in Australia on a temporary basis. Box 2.2 explains what has changed with the new TSS visa program.
3. Highly skilled workers, such as managers, professionals and technicians, are also eligible for a Temporary Work (Short Stay Specialist) visa (subclass 400), valid for three months (six months in limited circumstances). This visa requires a letter of job offer or an employment contract, specifying the details of the position, duration, role and reason for recruitment. Freelance workers are eligible for this visa too. The application process requires also

evidence that the work or activity will not have an adverse impact on Australian workers. Unlike the 457 visa, the 400 visa is only valid for non-ongoing work.

4. The OECD STRI does not cover employment in local firms, but only temporary movement of professional services providers (e.g. trade through Mode 4). Labour market legislation still applies in countries where there is no distinction in the law between employees and services suppliers.
5. For instance, LMTs foreseen under the TSS visa program require sponsors to provide evidence that a suitably qualified Australian worker is not available for the nominated position. Such evidence would include at least two advertisements in English of the position in Australia, placed within six months for minimum period of 21 days, providing adequate information about the job, the employer and the pay. In addition, sponsoring businesses will be required to pay in full a SAF levy, at nomination stage, per application and covering the entire visa period.
6. The threshold above which screening is required for acquisitions by all foreign investors was recently raised to AUD 261 million, and for some FTA partners to AUD 1 134 million (indexed annually) for acquisitions in non-sensitive business. There is also an AUD 57 million threshold for investment in agribusinesses, and an AUD 15 million (cumulative) threshold for agricultural land, which is not indexed. Sensitive sectors are media; telecommunications; transport; defence and military related industries; encryption and securities technologies and communications systems; extraction of uranium or plutonium; or the operation of nuclear facilities. Investment by foreign state-owned enterprises is subject to screening irrespective of the value. However, notification requirements for green-field investment have been lifted.
7. As part of the revision of the 2015 foreign investment regime, the thresholds above which screening was required for acquiring agricultural land and investing in agro-business were significantly raised. Nonetheless, acquisition of land and real estate by foreigners is still subject to government authorisation. In the Australian Government budget 2017-18, the government will streamline the commercial fee framework, introducing a new business exemption certificate to allow foreign investors to attain pre-approval for multiple investments in the one application in lieu of applying separately for each investment. This would reduce the compliance cost of foreign investors planning to open up multiple branches in Australia.
8. In doing so, the government considers factors such as the impact on competition and the firm's market share, particularly in sensitive sectors (including investment in media and telecommunications, transport, and defence), and whether the investment brings economic benefits. The investment is also assessed to establish it does not raise national security issues. National security considerations are important to protect Australia's strategic and security interests, but certain other criteria might shield large local firms, with market power, from foreign competition.
9. See <https://www.homeaffairs.gov.au/trav/visa-1/651-#tab-content-1> and <https://www.homeaffairs.gov.au/trav/visa-1/601-#tab-content-1>.
10. Australia's Visitor visa generally provides three months stay per visit (multiple entry) and the visa validity may range from 12 months, to 3 or 10 years (depending on individual circumstances).
11. <https://www.homeaffairs.gov.au/busi/trav/apec/for-foreign-applicants#>.
12. An entrepreneur has to apply for registration as an Australian company and obtain a certificate of incorporation with an Australian Company Number. Certain companies are also required to register with the Australian Tax Office to obtain an Australian Business Number.

There is also a registration requirement with an insurance agency for worker compensation insurance if the new business has or plans to hire employees.

13. The Federal Government created an Office of Best Practise Regulation in 2007, issuing the Australian Government Guide to Regulation. As a result all regulatory costs, whether arising from new regulations or changes to existing regulation, have to be quantified using the Regulatory Burden Measurement framework. This framework takes into account compliance costs, delay costs and administrative costs. See Australian Government, Department of the Prime Minister and Cabinet Office of Best Practice Regulation (2016).
14. The term “data”, here and in the following, refers to “personal data” or “personal information” (i.e. information that identifies or could reasonably identify the data subject. Some types of personal information are “sensitive information” (e.g. health records, race or ethnicity, religious beliefs, political opinions, etc.) and subject to a higher degree of protection. In this specific context “data sender” refers to domestic Government agencies, all private sector and non-profit organisations with annual turnover above AUD 3 million, all private health service providers and some small businesses, collectively referred to as “APP entities”, as defined in s 6(1) of the *Privacy Act 1998*.
15. The APPs, including APP 8, are similar to the *OECD Guidelines on the Protection of Privacy and Trans-border Flows of Personal Data* (OECD, 2015) in that they promote the free flow of personal data when the recipient country (OECD Member Country or not) substantially observes the APPs, or when there are sufficient private sector safeguards put in place by the data sender to ensure a level of protection consistent with the APPs.
16. “Reasonable steps” under APP 8 depend on factors including the sensitivity of the personal information, the relationship between the disclosing and recipient entities and existing safeguards implemented by the recipient. See OAIC's Privacy business resource 8: Sending personal information overseas.
17. Recent initiatives include an APEC project on the Harmonisation of Standards (HoSt) for data flows across APEC economies, bringing together national standards bodies, SMEs, governments and regulators to encourage APEC member economies to participate in developing and adopting international cross-border data transfer standards. Australia launched the project at the November 2015 APEC HoST workshop, which produced a set of recommendations for developing and implementing proposed standards (APEC 2015). In November 2017, Australia announced its intention to participate in the APEC Cross Border Privacy Rules (CBPR) system, which aims to build consumer, business and regulator trust in cross border flows of personal information by asking participating businesses to develop and implement data privacy policies consistent with the APEC Privacy Framework. The latter is consistent with the core values of the OECD's *Guidelines on the Protection of Privacy and Trans-Border Flows of Personal Data* (OECD, 2015).
18. More progressive agreements such as the amended SAFTA and the CPTPP cover a wider range of provisions aimed at enabling digital trade. See also Australia's International Cyber Engagement Strategy, which outlines provisions in Australia's FTAs on digital trade: http://dfat.gov.au/international-relations/themes/cyber-affairs/aices/chapters/part_1_digital_trade.html.
19. Air transport services include passenger and cargo traffic carried domestically or internationally. Moreover, the OECD STRI indices for air and road transport services cover commercial establishment abroad only, as cross-border trade in these sectors is typically addressed through bilateral agreements.
20. A special regime operates for Qantas, a privately owned flag carrier, where foreign investors may only own up to 49% of its equity shares. In 2014, an amendment to the *Qantas Sales Act 1992* lifted the foreign equity cap was lifted from 35% to 49% in an attempt to facilitate

access to foreign capital and address the company's outstanding losses; nevertheless, the majority of the national carrier remains domestically-owned.

21. This is without prejudice to different conditions that might apply through bilateral air services agreements to which Australia is a party.
22. For instance, at Sydney airport, landing and take-off slots are allocated through grandfathering, e.g. the airport slot manager must offer a slot series to an existing operator with historical precedence. Only then is the remaining slot pool allocated to new entrants. This practice is not unique to the Australian context, but rather common in countries with congested airports. In 2017, the Australian government announced its intention to build a second international airport in Sydney, to be completed by 2026, which could help address congestion and inefficiencies arising from the increasing number of international flights, but also allocate new slots in a way that provides more opportunities for new entrants to compete.
23. The Australian International Shipping Register (AISR) provides a competitive registration alternative for Australian ship-owners and operators who predominantly engage in international trade. While registration in the AISR grants access to a more favourable taxation regime (including income tax exemption and mixed crewing arrangements), it is mainly intended for international trade and does not grant unrestricted access to coastal or intra-state trading. Vessels registered in the AISR can, however, apply for temporary licenses.
24. Australia's current cabotage system is organised around a 3-tier licensing regime, comprising General Licenses, granting unrestricted coastal trading for a period of five years to Australian vessels registered in the AGSR; Temporary Licenses, available to foreign-flagged vessels and those registered in the AISR, restricted to a specified number of authorised routes over a 12-month period, and subject to more stringent requirements; and Emergency Licenses, allowing coastal trading for a period no longer than 30 days and design to respond to national emergencies.
25. In particular, the *Shipping Reform (Tax Incentives) Act 2012* grants a Shipping Exempt Income certificate to operators of Australian-registered vessels that comply with a set of conditions. Eligible certified vessels can also claim additional tax rebates. For instance, shipping companies employing Australian resident seafarers for overseas voyages on any certified vessel can benefit from a refundable tax offset for salaries, wages and allowances paid to such seafarers. Moreover, Australian corporate owners of Australian registered eligible vessels can claim accelerated depreciation and rollover relief, while foreign owners of eligible vessels leased under a bareboat or demise charter to an Australian resident company are eligible for an exemption from royalty withholding tax. The conditions attached to these benefits clearly favour Australian (majority-owned and operated) vessels with obvious impacts on vessels owned and operated by foreign shipping companies.
26. *Part X of the Competition and Consumer Act 2010* ensures that Australian exporters and importers have continued access to frequent and reliable liner cargo shipping services at internationally competitive freight rates. Nevertheless, these provisions still limit competition by allowing some forms of cartel. Moreover, every liner shipping company providing international liner cargo shipping services to or from Australia must have an agent in Australia.
27. The OECD STRI for Road Freight Transport does not include international traffic, which is typically covered by bilateral agreements, and captures only barriers to commercial establishment and accompanying movement of natural persons providing road freight transport services.

28. In particular, the ACCC assesses notifications about prices for Australia Post's reserved services, deals with disputes about the terms and conditions for its bulk mail services, and monitors Australia Post for cross-subsidies between reserved and non-reserved services.
29. Korea requires a local license to provide services and to own shares in auditing or accounting firms. To obtain a license auditors and accountants must have the required qualification from a Korean university. Recognition of foreign qualification is only available to FTA partners, and there is no temporary licensing in place, which means that the market is effectively closed to third country services providers.
30. Australia's three recognised professional accounting bodies are the Certified Public Accountants Australia (CPAA); the Institute of Chartered Accountants in Australia (ICAA) – recently merged with the New Zealand Institute of Chartered Accountants (NZICA) to create CAANZ; and the Institute of Public Accountants.
31. The professional bodies recognised in Australia are The American Institute of Certified Public Accountants; Association of Certified Chartered Accountants (United Kingdom); Canadian Institute of Chartered Accountants; Institute of Chartered Accountants of New Zealand; The Institute of Chartered Accountants in England and Wales; The Institute of Chartered Accountants in Ireland; and The Institute of Chartered Accountants of Scotland. Members of the three Australian accounting bodies are also eligible, through a Memorandum of Understanding (MoU) and a Memorandum of Cooperation (MoC), for membership in other professional bodies (e.g. the Institute of Chartered Accountants India (ICAI), the American Institute of Certified Public Accountants (AICPA), the Chinese Institute of Certified Public Accountants (CICPA), Institute of Certified Public Accountants of Singapore (ICPAS) and the Hong Kong Institute of Certified Public Accountants (HKCPA)).
32. The APC is not sufficient for representation at a court in New South Wales. For this purpose, membership in the bar association is required and additional restrictions apply.
33. Overseas qualified lawyers can apply for a compliance certificate to be admitted to the NSW Legal Profession Admission Board and therefore obtain an APC. In NSW, foreign law can be practiced once an Australian lawyer obtains an Australian Registration Certificate (ARC) (becoming Australian registered foreign lawyers). Foreign lawyers can also practice foreign law in Australia without necessarily holding the ARC if they are not based in Australia and only fly-in for less than 90 days per year.
34. The OECD STRI recognises that prudential rules and standards are set by national governments, regulators and international financial standard-setting bodies, to ensure the safety and integrity of financial institutions. Whether prudential regulation is in place to serve other policy objectives is beyond the scope of the STRI, which instead aims at capturing, in a comparable manner, the restrictive side of regulation in terms of additional impediments posed to foreign financial services providers.
35. The OECD STRI focuses only on the core activities of the financial services sector. Commercial banking services include deposit-taking, lending and payment services. Regulation of investment banking, non-bank investment and asset management is not taken into account. Similarly, the insurance sector only covers the services of life and non-life insurance, reinsurance and retrocession, and the auxiliary services of insurance intermediation and actuaries. Regulation of health insurance and pensions is outside of the scope of the STRI. This section focuses on the segments of financial services covered by the STRI database.
36. According to Article 5 of the *Banking Act 1959*, banking business includes both deposit-taking and lending activities.

37. For details, see: <http://www.apra.gov.au/adi/Publications/Pages/Letter-to-ADIs-Operation-of-foreign-banks-in-Australia.aspx>; last accessed 11 October 2017.
38. Australia's banking sector is relatively concentrated, particularly for some market segments, where the four biggest banks (Commonwealth Bank of Australia, Westpac Banking Corp, ANZ Banking Group and National Australia Bank) together control 80% of the country's lending market, which arguably reduces competitive pressure in the sector. The Government has recently commissioned an inquiry into the state of competition in the financial system, with the objective of improving consumer outcomes, productivity and international competitiveness of Australian financial services. A previous financial system inquiry, released in 2015 found, inter alia, that the banking sector was sufficiently competitive, despite the high level concentration, but that it needed to be reassessed regularly. The inquiry also stressed the importance of having stronger, independent and accountable regulators.
39. If the transaction involves a foreign investor then it must also be considered by the Treasurer under the *Foreign Acquisitions and Takeovers Act*, to ensure that it is not contrary to the national interest, and if the acquisition regards an Authorised Deposit-Taking Institution (ADI), the approval of APRA under the *Banking Act* is also required.

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Chapter 3. Australia's services advantages

Chapter 3 identifies the global and regional strengths of Australian services trade based on analytical evidence from services trade data and micro-data. The chapter sets out opportunities for Australians in global markets, examining sectoral strengths and relative export performance with main trading partners, including with regard to Australia's comparative advantage, bilateral export patterns and the demand-side role of regional value chains.

Global and regional opportunities for Australians

During the last 15 years, patterns of world trade have changed, with more types of services than ever before being traded through digital delivery of data and with new actors in global markets. In particular, the People's Republic of China (hereafter "China") and other Asia-Pacific economies are turning to services as a complement to their exports of labour-intensive manufacturing products, and India is already a major exporter of computer and business services. This chapter examines how Australia's services trade has adapted to the changing international commercial environment. Evidence is presented for the services sector as a whole, for individual industries within the sector and at firm level.

Mapping Australia's services trade

Global markets for Australian services

In 2016, the Asia-Pacific region was the destination of 62% of all Australian gross services exports (Figure 3.1, Panel A).¹ Europe and the Americas took 17% and 16%, respectively. The fastest growing markets for Australian services exports are also in the Asia-Pacific region, whose shares of total services exports increased by 12 percentage points (pp) in a decade, heightening the geographic concentration of trade towards proximate markets.

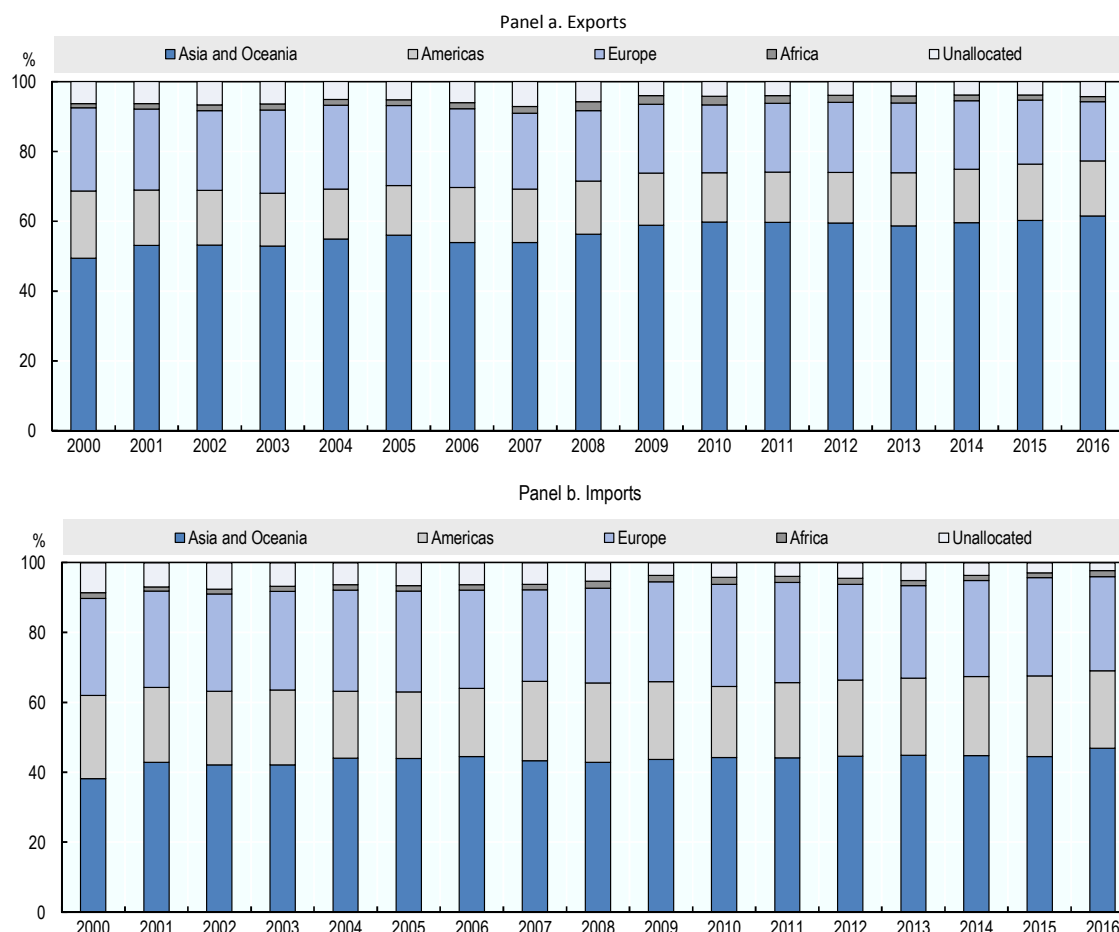
This trend mainly reflects strong growth in services exports to China and, to a lesser extent, India. In 2000, China was Australia's ninth largest services export market (with a 3% share worth AUD 859 million). By 2016, China was the most important services export destination, with a 16% share worth AUD 11.3 billion. India's share increased from just over 1% of total services exports (AUD 467 million) in 2000 to 5% (AUD 3.5 billion) in 2016. There was also strong growth in the value of Australian services exports to Malaysia, the Philippines and Viet Nam. These trends are driven by changes in global economic conditions, particularly by rising income levels in many Asian economies and their increasing demand for services.

Inevitably, the shares of Australian services exports in other destination markets have shrunk between 2000 and 2016. For example, the share to Japan fell by 7 pp to 3% of total services exports in 2016, and that to New Zealand by 2 pp, although in absolute value terms, exports to both countries are large (in 2016 Japan: AUD 2.3 billion, New Zealand: AUD 4.3 billion).² Although the shares of Australian services exports going to traditional English-speaking markets (the United States, the United Kingdom and New Zealand) have decreased, these markets remain among Australia's main trading partners.

Geographic concentration is less marked on the import side (Figure 3.1, Panel B). In 2016, the Asia-Pacific region accounted for 47% of total services imports in 2016, up from 38% in 2000, Europe for 27%, and the Americas for 22%. The growth pattern is similar to that observed on the export side, with increasing import shares in particular from India, China, and Singapore, compared to a shrinking share of imports sourced from Europe (most notably, from the United Kingdom and Switzerland) and the Americas (mainly the United States), all lower by 2-3 pp than in 2000.

Figure 3.1. Australia's trade in services by region

Shares, percentage, 2000-2016



Source: Own calculations on OECD International Trade in Services Statistics by Partner Country (ITSS), EBOPS 2010.

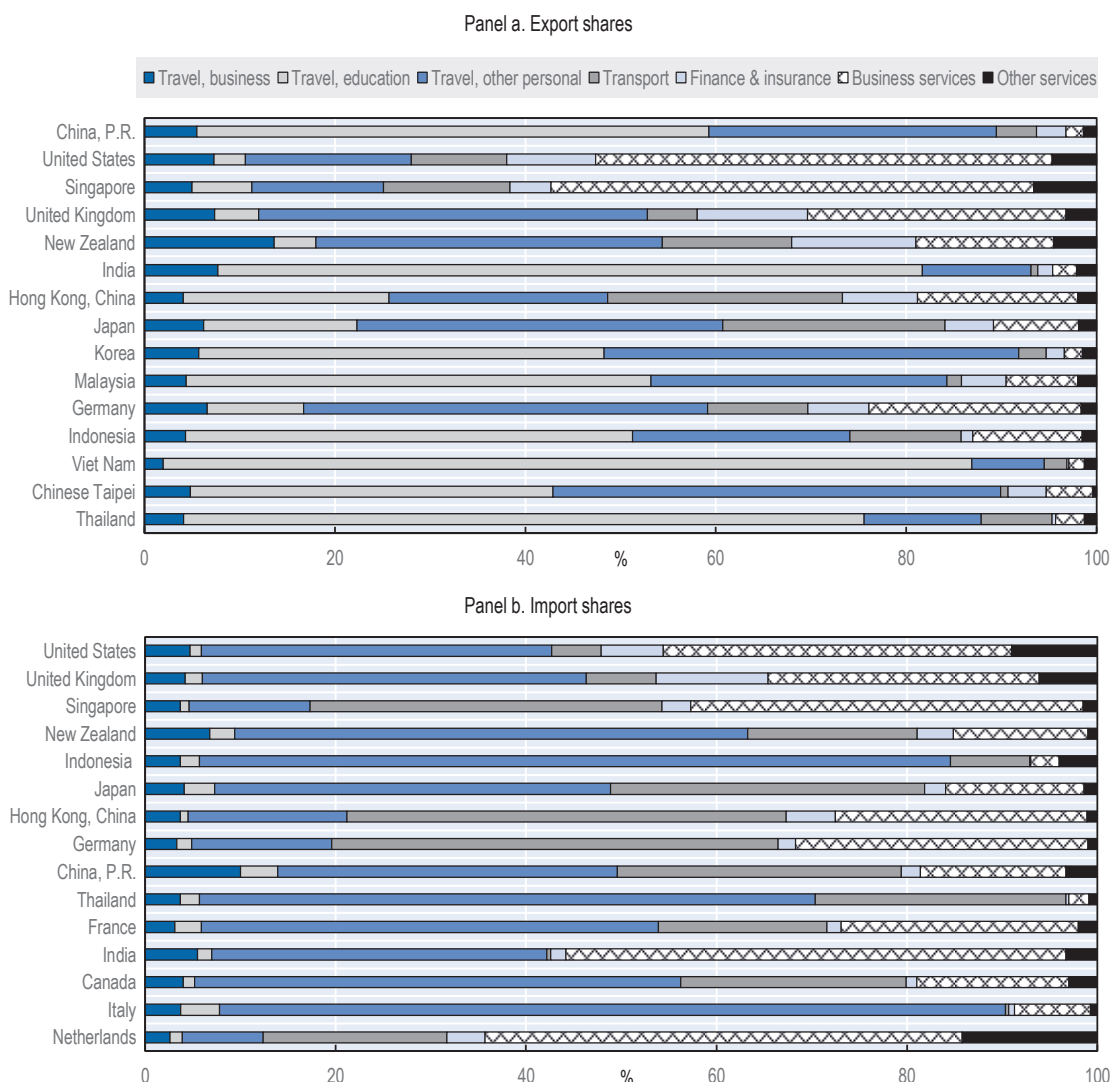
Australia's sectoral strengths

Figure 3.2 shows the decomposition of Australia's trade by main services categories and main trading partners. In 2016, the top 15 partner countries accounted for more than 70% of Australian total services trade. Australia's most important trading partners are within the Asia-Pacific region, most notably China, but also Singapore and New Zealand.

Travel services dominated Australia's exports to most of its main markets, and more so in the Asia-Pacific region. In 2016, Australian exports of travel services were around 90% of total services exports to China, India, Korea and Viet Nam (largely exports of education services).³ These shares were particularly high for Viet Nam (85%), India (74%) and Thailand (71%), where Australian exports of education-related travel services represented by far the most important service exported to those countries. Australian exports to Chinese Taipei, Korea, Germany and the United Kingdom, were mostly concentrated in personal travel services (other than education), with shares between about 40% and 50% of total services exported to those economies (or, in other words, services provided to international visitors from those economies). Nearly half of Australian services exported to the United

States and Singapore were business services, whilst financial services were relatively more important for New Zealand, the United States and the United Kingdom, with shares above 10% of Australian total services exports to these economies.

Figure 3.2. Australia's services trade, by partner and services sector, 2016 (in %)



Note: Economies are ranked by their share in Australian total services trade in 2016. Manufacturing services on physical inputs owned by others; Maintenance and repair services n.i.e.; Charges for the use of intellectual property n.i.e.; Telecommunications, computer, and information services; and Other business services. The “Other services” aggregate is composed of Construction; Personal, cultural, and recreational services; and Government goods and services n.i.e. More details can be found in Annex C, Tables A C.4 and A C.5.

Source: Own calculations on OECD International Trade in Services Statistics by Partner Country (ITSS), EBOPS 2010.

On the import side, in 2016, nearly all imports from Italy were personal travel services. Other important destinations for Australian tourists were Indonesia and Thailand, where 70-80% of all Australia’s services imports from those countries arose from personal travel services. Business services accounted for over half of Australia’s services imports sourced from India and the Netherlands, and around 40% of the services sourced from the United

States and Singapore. One-ninth of the services sourced from the United Kingdom in 2016 were finance and insurance services, while transport services accounted for around half of services imported from Germany and Hong Kong, China.

Australian comparative advantage

Table 3.1 shows Australia's comparative advantage *vis-à-vis* other OECD countries.⁴ By definition, all countries have areas of both comparative advantage and comparative disadvantage.⁵

Table 3.1. Australia's revealed comparative advantage *vis-à-vis* OECD countries, 2015

	RCA	Rank	1	2	3	4	5
Agriculture and food (HS Chapter 1-24)	2.0	4	NZL	ISL	CHL	AUS	NLD
Mineral and fuel (HS Chapter 25-27)	6.9	2	NOR	AUS	CHL	CAN	GRC
Manufacturing (HS Chapter 28-97)	0.4	31	SVK	MEX	CZE	KOR	JPN
SERVICES	0.8	24	LUX	GRC	IRL	ISL	GBR
Maintenance and repair services n.i.e.	0.1	25	USA	FRA	EST	ISR	PRT
Transport	0.5	33	DNK	GRC	ISL	LVA	EST
Travel	2.1	7	GRC	NZL	ISL	PRT	ESP
Business	1.9	9	ISL	USA	SWE	LUX	NZL
Personal	3.1	5	GRC	NZL	ISL	TUR	AUS
Education-related	11.9	1	AUS	NZL	USA	CAN	LVA
Personal travel, other	1.9	10	GRC	ISL	NZL	TUR	AUT
Construction	0.1	29	DNK	FIN	KOR	EST	JPN
Insurance and pension services	0.2	23	IRL	LUX	GBR	CHE	USA
Financial services	0.4	15	LUX	GBR	USA	CHE	IRL
Charges for the use of intellectual property n.i.e	0.1	23	USA	JPN	SWE	CHE	NLD
Telecommunications, computer, and information services	0.4	29	IRL	FIN	ISR	SWE	NLD
Telecommunications services	0.4	22	LUX	SVN	NLD	EST	FRA
Computer services	0.4	22	IRL	ISR	SWE	NLD	ISL
Information services	0.3	20	USA	NLD	LUX	SWE	SVN
Other business services	0.5	25	LUX	GBR	FRA	ISR	IRL
Research and development services	0.3	23	ISR	USA	FRA	SWE	LUX
Professional and management consulting services	0.9	12	BEL	USA	LUX	FRA	ISR
Legal, accounting, auditing, bookkeeping, and tax consulting s.	1.1	9	BEL	USA	LUX	CAN	FRA
Advertising, market research, and public opinion polling s.	0.8	18	ISR	LVA	EST	LUX	BEL
Technical, trade-related and other business services	0.4	27	LUX	IRL	FRA	SWE	PRT
Architectural, engineering, scientific and other technical s.	0.8	13	FRA	AUT	CAN	SWE	PRT
Waste treatment and de-pollution, agricultural and mining s.	0.5	10	NLD	FRA	GRC	DNK	SWE
Operating leasing services	0.2	21	IRL	EST	LVA	FRA	NLD
Trade-related services	0.6	17	LUX	ISR	IRL	FRA	KOR
Other business services n.i.e.	0.5	20	SWE	PRT	FRA	NLD	LVA
Personal, cultural, and recreational services	1.3	13	LUX	TUR	NZL	GBR	ISL

Note: Some OECD countries are not included in the calculations for detailed sector breakdown due to of missing data. The ranking of countries only refers to the countries in the dataset.

Source: Own calculations using OECD International Trade in Services Statistics by Partner Country (ITSS), EBOPS 2010, for services trade and World Integrated Trade Solution (WITS) by WTO, UNCTAD, ITC, UNSD and World Bank for goods trade.

Australia has a comparative advantage in the mineral and fuel sector and in agriculture and food products. The overall index for services is 0.7, indicating a comparative disadvantage for the sector as a whole. However, among individual services industries, Australia has a comparative advantage in travel services, and in particular in education-related travel services, outstripping all OECD countries. Indices for personal, cultural, and recreational services, and for legal, accounting, auditing, bookkeeping, and tax consulting services are slightly above one, indicating a marginal comparative advantage in these sectors.⁶ Other services industries revealed a comparative disadvantage.

Australia's comparative advantage can also be calculated for different regions of the world, although only for the main divisions of the services sector, since trade data for detailed sector decomposition are not broken down geographically.⁷ Table 3.2 shows that Australia has a wider range of comparative advantage in the Asia-Pacific region than in European, American and African markets. Insurance services and personal, cultural and recreational services are among the services for which Australia has a strong comparative advantage in the region. Other business services (mostly professional services) and financial services also have a comparative advantage in the Asia-Pacific region but less so in OECD markets.

Table 3.2. Australia's regional revealed comparative advantage, 2015

Vis-à-vis OECD countries

	World	Asia & Oceania	Europe	Americas	Africa
Agriculture and food (HS Chapter 1-24)	2.0	6.1	0.3	1.5	1.1
Mineral and fuel (HS Chapter 25-27)	6.9	21.3	0.5	0.4	0.2
Manufacturing (HS Chapter 28-97)	0.4	1.1	0.1	0.2	0.3
SERVICES	0.8	2.6	0.3	0.6	0.5
Maintenance and repair services n.i.e.	0.1	0.2	0.0	0.0	0.0
Transport	0.5	1.6	0.2	0.4	0.3
Travel	2.1	6.8	0.8	1.3	2.2
Construction	0.1	0.2	0.1	1.2	0.2
Insurance and pension services	0.2	2.6	0.0	0.0	0.1
Financial services	0.4	1.7	0.3	0.5	0.9
Charges for the use of intellectual property n.i.e	0.1	0.1	0.1	0.2	0.1
Telecommunications, computer, and information	0.4	1.1	0.2	1.0	0.1
Other business services	0.5	2.7	0.2	1.4	0.4
Personal, cultural, and recreational services	1.3	14.2	0.5	1.4	1.3

Note: Some OECD countries are not included in the calculations due to missing data. Hence, resulting RCAs might be inflated. Numbers should be considered as upper bound for Australia's revealed comparative advantage.

Source: Own calculations using OECD International Trade in Services Statistics by Partner Country (ITSS), EBOPS 2010, for services trade and World Integrated Trade Solution (WITS) by WTO, UNCTAD, ITC, UNSD and World Bank for goods trade.

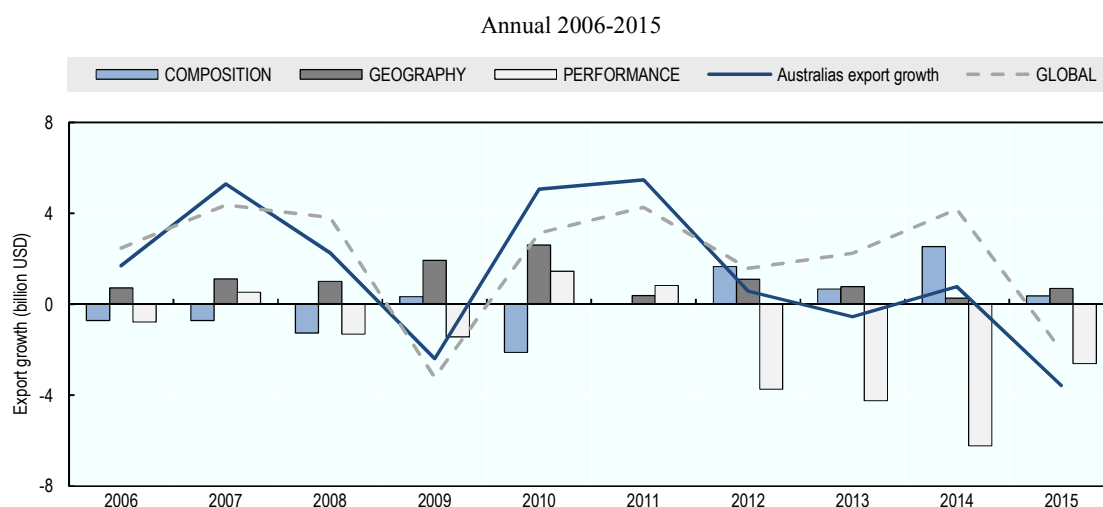
Australia's services export performance

Growth potential must also be considered in order to assess Australia's trade performance fully. Some countries may be located in a world region where demand is growing rapidly; others may be in a better position to grow because they have comparative advantage in sectors where world demand is growing faster than average.⁸ Figure 3.3 assesses Australia's performance on the world services market when these external factors are controlled for.⁹

Results in Figure 3.3 are based on data for 32 of the 34 bilateral partners that Australia distinguishes in its export statistics, across eleven services sectors.¹⁰ These country-sector combinations represent about 80% of Australia's exports in 2015. Australia's annual export growth from the eleven services sectors covered to the 32 partner countries is shown in billion USD for the periods 2006-2015 decomposed as defined in endnote 9.¹¹

Aggregate market demand shifts have generally worked in Australia's favour. This is particularly true for Australia's geographical location. Proximity to the world's fastest-growing economies led to substantial export growth potential with particularly high growth rates in 2009 and 2010. Since 2012, additional potential growth was associated with the sector mix of Australia's services exports and with their concentration in relatively fast-growing segments of the world market. Nevertheless, Australia could not always capitalise on this favourable shift in the world market demand for services.

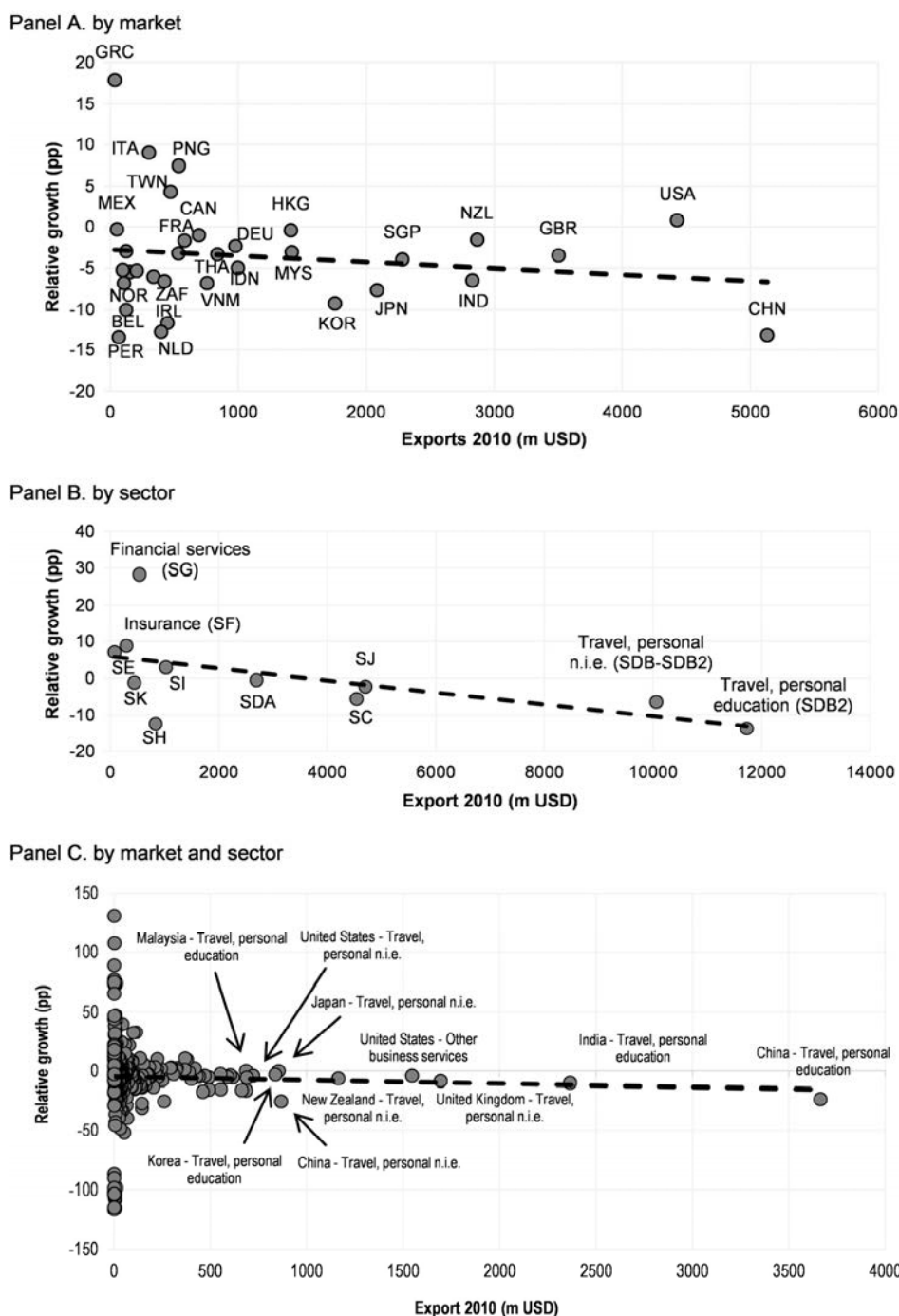
Figure 3.3. Decomposition of Australia's export growth



Source: Own calculations on OECD International Trade in Services Statistics by Partner Country (ITSS), EBOPS 2010.

The results suggest that Australia performed in line with expectations roughly up to 2011. During that time Australia had a slight disadvantage due to the export mix (concentration in relatively slow growing sectors), which was offset by a favourable geographic profile (concentration in relatively fast-growing markets in the Asia-Pacific region). However, Australia's services export performance has fallen in recent years both in absolute terms and relative to potential export growth. This pattern may partly be due to a mechanical drop in the USD value of exports of tourism and education services, due to the depreciation of the AUD since 2013. Latest data from 2015 could indicate a reversal of this trend.

Figure 3.4. The performance of Australian services export markets, 2010-2015



Note: Services industries reported in Figure 16 include: (SC) transport, (SE) construction, (SF) insurance and pension services, (SG) financial services, (SI) telecommunications, computer, and information services, and (SJ) other business services, (SH) charges for the use of intellectual property n.i.e., (SK) Personal, cultural, and recreational services, (SDB2) education-related travel services, (SDA) Business-related travel services and (SDB-SDB2) Personal-related travel services.

Source: Own calculations on OECD International Trade in Services Statistics by Partner Country (ITSS), EBOPS 2010 and IMF World Trade in Services.

To pinpoint areas of strategic importance, Figure 3.4 plots the correlation between Australia's initial exports in 2010 and the relative export performance in 2010-2015, broken down by sector (panel a), by import market (panel b), and by sector-market (panel c).¹² Negative correlations (downward sloping linear trends) imply that Australia was losing ground in some of its previous strongholds. By contrast, initially less important sectors, like insurance and financial services, over performed in relation to their export potential 2010 and 2015 (presumably partly reflecting a post-crisis rebound in cross-border financial transactions). Although the analysis offered here is purely descriptive and does not identify the reasons for these performance outcomes, it indicates key sectors and markets where Australia's export performance is lagging general import growth and therefore represents strategic opportunities for improvement.

About 90% of Australia's performance deficit is due to travel services, more specifically, to education-related personal travel and other personal travel services (mainly tourism). The largest "deficit-market" is China, followed by Japan, Singapore, India and Korea. While more and more residents of these countries travel to Australia for tourism or education purposes, growth rates of personal travel from these countries to other destinations are even higher. It is debatable whether this trend should be considered worrying. Alternatively, it may reflect a strong recovery of countries that were hit harder than Australia by the global financial crisis or it may be due to capacity constraints in Australia.

Foreign students make up around 3% of Australia's population and a strong regional concentration of tourists and students in certain areas puts additional strain on existing capacity. While Australia clearly has a large potential for further growth of travel services exports, well-managed expansion of the sector should take into account the preservation of Australia's natural landscapes and unique ecosystems in order to make exports of Australia's education and travel services sustainable in the long run. Short-run growth cannot be the exclusive priority for Australia's tourism industry.

Bilateral trade patterns

Bilateral trade flows between countries are determined by a number of diverse factors. Countless studies in different periods and contexts have found that factors like country size, distance, common language, and cultural and historical links, generally have a role to play. Regulatory trade barriers, such as those measured by OECD Services Trade Restrictiveness Index (STRI) (Box 2.1), and the degree of policy heterogeneity in the two trade partners, are also important.¹³ The participation of both countries in the same FTA, and its specific coverage, may be crucial. Finally, the Mode by which the trade flow is delivered may also be a significant causal factor.¹⁴

In the case of Australia's services exports, market size and proximity matter, and trade is also positively influenced by other historical and cultural factors. A common language virtually doubles trade flows (other things equal).¹⁵ Besides the language effect shared with all English-speaking countries, when the trade partner is the United Kingdom, this has a further near-doubling effect on trade. Inevitably, it is not possible to identify the true driver of these trade effects: a common language is in fact a proxy for a whole set of commonalities between English-speaking countries, including a common legal system, which may be important determinants of services trade.

When there is an FTA with specific provisions on services in place between Australia and the importing country, this boosts Australia's trade with the FTA partner by about two-thirds relative to non-FTA partners.¹⁶ Recent OECD work confirms that the legal bindings found in services trade agreements tend to have a positive effect on exports by reducing the

level of uncertainty faced by services providers.¹⁷ The work demonstrates that an ambitious services trade policy can ensure that Australians have the opportunity to seize the benefits of global services sector growth.

Furthermore, the STRI indices, measuring the trade restrictiveness of Australia's export markets, have a negative impact on bilateral trade. Thus, Australia's exports are negatively affected by regulatory barriers in the importing country. A strategic focus on reducing behind-the-border regulatory barriers in key markets, for example through bilateral, regional and multilateral co-operation and an ambitious trade negotiation agenda, can generate tangible benefits for Australian exporters. For example, reducing a trading partner's STRI score by 0.1 can increase Australia's exports by up to 50%. Such reduction of the STRI corresponds to around 50% of the average trade barriers in relatively liberal sectors like distribution and sound recording. In more restrictive sectors, such as legal services and air transport, it corresponds on average to around 25% of all existing barriers. Countries that are more restrictive than average have a much larger potential for liberalisation, opening up much larger opportunities for export growth of Australian services firms.

Barriers specific to different trading Modes have differential effects. Barriers to Mode 3 (such as restrictions on foreign equity thresholds or residency requirements for board members for Mode 3) have a large impact on trade in services, highlighting the complementarity between commercial presence abroad and cross-border services trade. Barriers behind the border (like barriers to competition and the efficiency of doing business in a country, which are relevant to all Modes) also appear to impede services trade. Furthermore, not only the level of restrictions, but also the heterogeneity of regulations between Australia and the partner country is in itself a barrier to trade: the more dissimilar the regulatory environments are, the less they trade with each other.

As such, Australia's services exports are negatively affected by both the level of the regulatory barriers in the partner country and the difference in regulation compared to the domestic regulatory framework. Lack of liberalisation and regulatory cooperation may go some way to explaining why Australian services exports have not achieved their potential in some key sectors and markets, while they performed well in others. Consequently, regulatory reforms in major markets, negotiated reductions of regulatory barriers, including through FTAs, and international regulatory cooperation can help to foster Australia's international trade in services.

Travel services

Travel services make up about 61% of Australia's services exports and 44% of its services imports in 2016. Australia has its strongest comparative advantage in this sector, after mining. However, the decomposition analysis above shows that Australia has lost some ground in travel services exports since 2010, especially in education-related travel.

The determinants of bilateral travel services exports are also analysed.¹⁸ As well as the usual factors underlying bilateral trade patterns (see previous section), the academic ranking of origin countries and destination countries (Table 3.3) and the existence of a free trade agreement covering services as well as goods, are recognised.¹⁹

As expected, bilateral travel services exports are higher between larger economies as measured by their Gross Domestic Product (GDP). Greater distance between partners has a negative effect on travel exports, and, for most components of travel services, there is an additional boost to bilateral travel when countries share a common land border – with the exception of education-related travel. Moreover, bilateral distance has a less negative effect for education-related travel than for other categories. Other things being equal, students are more likely to travel to remote destinations than tourists or business travellers.

A common language gives the greatest boost to education-related travel and, to a lesser extent, other personal travel (tourism, health-related travel), but has no impact on business travel. Bilateral travel exports are greater between countries with historical ties. Generally, this impact is similar for both directions of bilateral travel.

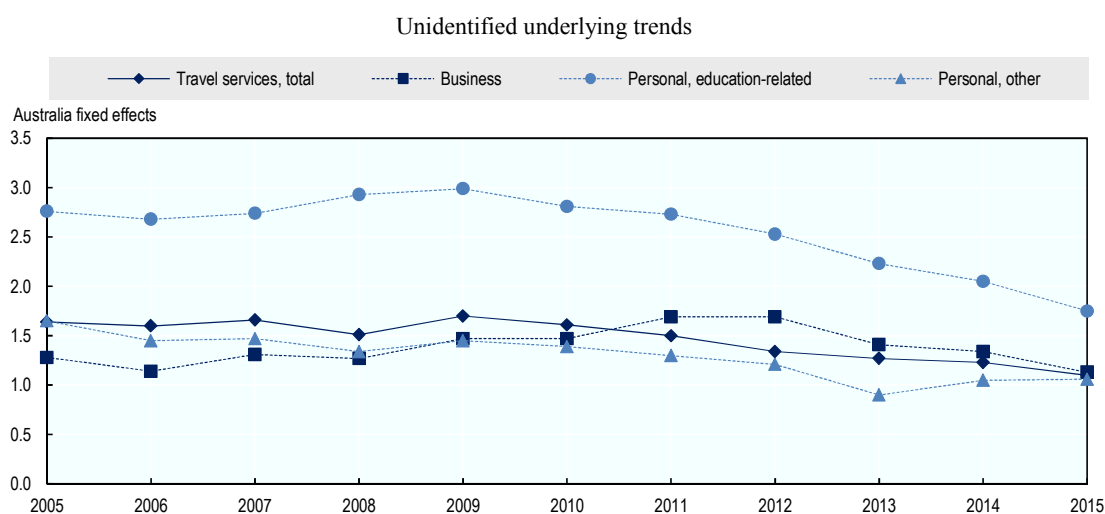
Table 3.3. Number of universities in top 200 list

Country	2005	2010	2015
United States	90	89	78
United Kingdom	19	19	21
Germany	16	14	13
China	2	4	10
Australia	6	7	8
France	8	7	8
Netherlands	7	9	8
Japan	9	9	7
Canada	8	8	6
Switzerland	6	6	6

Source: Academic Ranking of World Universities, Shanghai Ranking Consultancy. Available at <http://www.shanghairanking.com/>.

In addition, trade in travel services is greater between countries that are linked by an FTA covering services commitments and this effect is particularly high for education-related travel services.²⁰ Moreover, the quality of the academic education matters for education-related travel. Students tend to travel from countries with fewer or no top 200 universities to countries with many top 200 universities. The analysis underlying these results suggests that one additional top 200 university in Australia could increase exports of education-related travel by around 9%. The quality of Australia's education partly explains why Australia has been one of the world's major exporters of education-related travel services. Nevertheless, underlying trends (picked up after other variables have been controlled for) suggest that Australia is losing some of its past competitive advantage in education-related travel services and in other personal travel services, corroborating the results in Figure 3.5. The declining trend is plotted in Figure 3.5; Australia still over-performs in exports of travel services, but has lost ground since 2010 compared to other exporters of education services.

Figure 3.5. Australia's export of travel services, 2000-2015



Note: Time trends picked up by the gravity model.

Source: Own calculations on OECD International Trade in Services Statistics by Partner Country (ITSS).

Regional demand drivers of Australian services exports

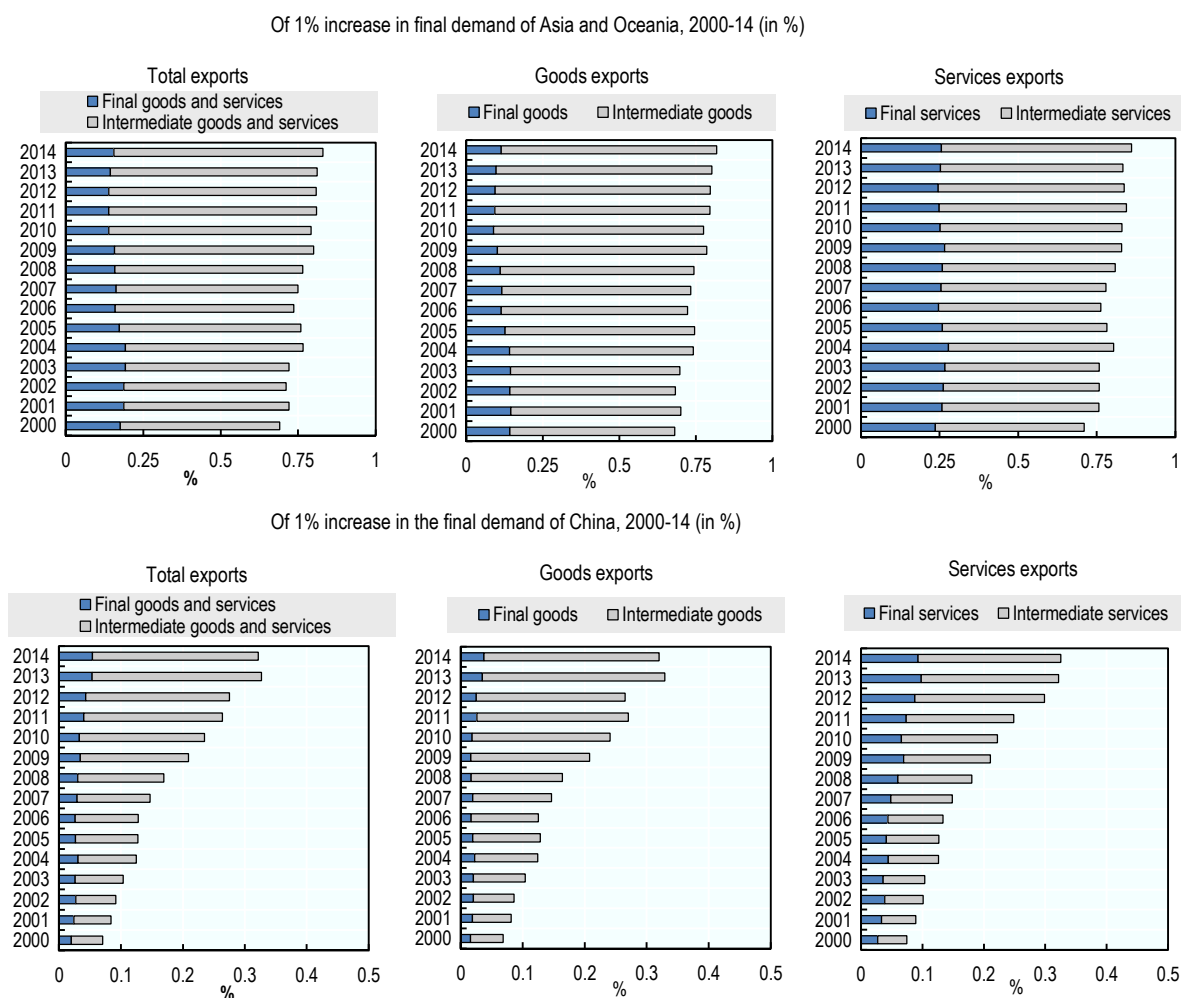
Australia's trade in services relies heavily on regional partners in the Asia-Pacific region, with about 62% of exports and 47% of imports remaining within the region in 2016.²¹ Figure 3.6 shows the growing dependence of Australian total and sectoral gross exports on regional demand between 2000 and 2014, in terms of how much Australian exports expand when final demand for all categories of goods and services rises by 1% in Asia and Oceania.²² In 2000, a 1% rise in final demand in Asia and Oceania led to 0.69% additional Australian exports of goods and services worldwide, whereas by 2014 the export boost was 0.83% (0.86% for services sectors and 0.82% for goods sectors). The stronger export response is due to growing regional trade in intermediate goods and services. Australia has become increasingly engaged in regional value chains as a supplier of raw materials, intermediate manufactured goods and increasingly intermediate services.

China is the main driver of this development (Figure 3.6, bottom panel, and Table 3.4). While a 1% increase in Chinese final demand would have led to a mere 0.07% growth in Australian exports in 2000, this response had increased to 0.32% by 2014. These figures confirm Australia's strong position as a services exporter to China, but also expose its economy's vulnerability to economic slowdown in that country.

Export growth for the aggregate economy is virtually identical whether measured in gross or in value added terms. However, when exports are identified by the origin of value, the dependency of each Australian services sector on final demand from Asia and Oceania emerges more clearly. Considering Australia's export dependency in 2014 on the final demand from its five most important regional partners (China, Japan, Korea, India and New Zealand), China is the largest source of final demand for Australian value added in every single sector of the economy. In line with evidence presented above, the education and hospitality sectors are most dependent on final demand from Asia and Oceania. China accounts for more than half of the total trade effect in Australia's education sector, which is

larger than for any other sector, thus highlighting the importance of Australia as a destination for Chinese students.

Figure 3.6. Impact on total exports



Note: In the OECD-WTO TiVA database, Asia and Oceania covers: Brunei; Cambodia; China; Chinese Taipei; Hong Kong, China; India; Indonesia; Israel; Japan; Korea; Malaysia; New Zealand; Philippines; Saudi Arabia; Singapore; Turkey; Thailand; Viet Nam.

Source: Own calculations based on the OECD-WTO TiVA database, June 2017.

Table 3.4. Impact on value added export

Of a 1% increase in final demand from Asia and Oceania, 2014 (in %)

	Asia & Oceania	CHN	JPN	KOR	IND	NZL
Services	0.844	0.319	0.125	0.053	0.052	0.052
Electricity, gas and water supply	0.810	0.305	0.149	0.051	0.061	0.037
Construction	0.821	0.321	0.172	0.052	0.051	0.036
Wholesale and retail trade; repairs	0.816	0.300	0.131	0.059	0.047	0.042
Hotels and restaurants	1.154	0.493	0.070	0.066	0.047	0.103
Transport and storage	0.881	0.310	0.124	0.040	0.058	0.060
Post and telecommunications	0.816	0.277	0.122	0.054	0.051	0.069
Financial intermediation	0.784	0.317	0.142	0.049	0.045	0.036
Real estate activities	0.874	0.317	0.127	0.055	0.069	0.058
Renting of machinery and equipment	0.809	0.283	0.139	0.049	0.075	0.077
Computer and related activities	0.798	0.263	0.131	0.047	0.065	0.074
R&D and other business activities	0.738	0.262	0.126	0.049	0.052	0.046
Public admin. and defence; compulsory social security	0.824	0.302	0.140	0.049	0.052	0.053
Education	1.193	0.638	0.059	0.077	0.039	0.065
Health and social work	1.011	0.299	0.124	0.073	0.065	0.044
Other community, social and personal services	0.637	0.222	0.059	0.051	0.042	0.065
Goods	0.825	0.334	0.196	0.056	0.043	0.024
Agriculture, hunting, forestry and fishing	1.044	0.361	0.157	0.080	0.027	0.029
Mining and quarrying	0.798	0.368	0.231	0.053	0.043	0.003
Manufacturing	0.797	0.244	0.128	0.052	0.050	0.070
Total economy	0.835	0.327	0.160	0.054	0.048	0.038

Note: In the OECD-WTO TiVA database, Asia and Oceania covers Turkey; Israel; Saudi Arabia; New Zealand; China; Chinese Taipei; Hong Kong, China; India; Japan; Korea; Brunei; Cambodia; Indonesia; Malaysia; Philippines; Singapore; Thailand; Viet Nam.

Source: Own calculations based on the OECD-WTO TiVA database, June 2017.

Australia's services trading firms

Firm-level analysis of ABS trade and investment data offers further insights. After a descriptive analysis of trading firms in Australia engaged in services exports and imports, the firm-level impact of regulatory barriers on services trade is examined.²³ Firm-level and sector-level data on foreign direct investment holdings are then analysed in order to highlight the main aspects of investment in services in Australia and overseas.

A portrait of firms trading services in Australia

The average firm in Australia imports considerably more services than it exports. In 2016, firms imported on average around AUD 30 million, and exported a little over AUD 20 million.²⁴ Firms importing services are typically larger in size than those exporting services, both in terms of annual average turnover and average number of employees.

Table 3.5 shows the intensiveness with which the average firm trades in services (fourth column) and the extensiveness of the average firm's services trade in terms of average number of countries served and average number of services traded (second and third columns, respectively). Average turnover (in AUD million), average number of employees per firm, and the share of firms in the sample whose core activity is in services sectors, are also shown. Manufacturing firms are also involved in services trade, although more so on the importing side, where they account for about 20% of the sample (last column). The period covered by Table 3.5 is too short to discern any clear trends.²⁵

Table 3.5. Australian exporters and importers of services, 2013-2016

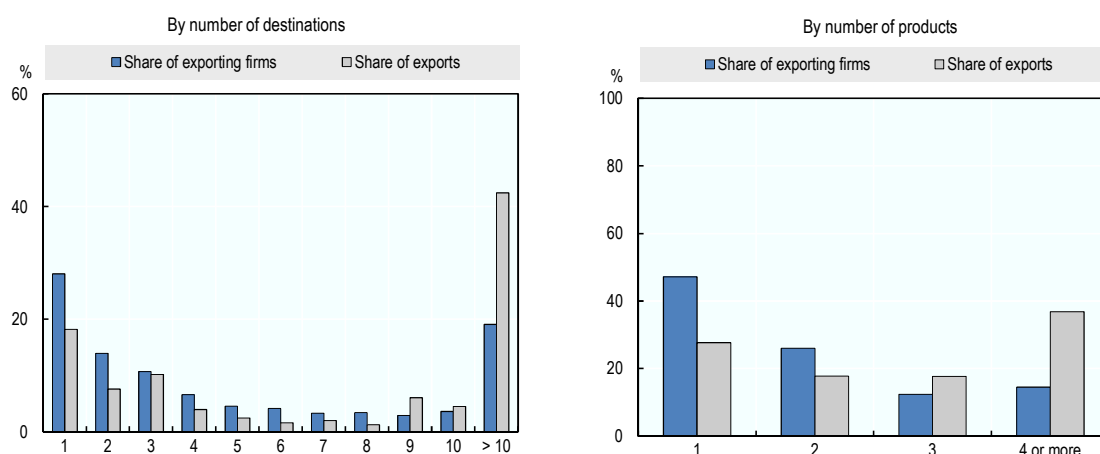
	Average number of partner countries by firm	Average number of products traded per firm	Average trade value per firm, million AUD	Average turnover per firm, million AUD	Average number of employees per firm	Share of firms with main activity in services
<i>Exports</i>						
2013	4.1	1.6	10	498	896	88%
2014	5.1	1.8	18	863	795	88%
2015	5.2	1.8	20	1 029	827	87%
2016	5.2	1.7	20	667	773	86%
<i>Imports</i>						
2013	3.7	2.3	43	674	1 049	81%
2014	4.6	2.6	36	1 137	967	82%
2015	4.8	2.5	32	1 274	966	81%
2016	5.0	2.5	29	933	916	80%

Note: Only partial information is available in the first year of the sample.

Source: Own calculations on ABS Survey of International Trade in Services data. More information on ABS firm-level data can be found in Annex A.

Behind these averages, however, Australian services trade at firm level is very concentrated in relatively few global players that engage with a diversified set of foreign markets and realise the large majority of international sales (Figure 3.7, left side). In fact, of the few firms that export to more than ten countries, representing nearly one fifth of the sample, these account for the largest part of total services exports (more than 40%). At the other end of the distribution, about 30% of all exporting firms serve only one foreign market and contribute to no more than 18% of total services exports.

Concentration is less pronounced in terms of the number of services exported (Figure 3.7, right side). Nearly half of all firms in the sample export only one kind of service, but these firms are responsible for about 30% of total services exports. At the same time, there is also a smaller number of, possibly larger, firms that provide multiple services to foreign markets and realise non-negligible shares of total services exports.

Figure 3.7. Concentration of services exporters, average 2013-2017

Source: Own calculations based on ABS Survey of International Trade in Services data.

Services exporters in Australia also depend strongly on their top destination market (Table 3.6). On average, and across all firms, their largest market accounts for more than two thirds of their exports. Some firms, most likely smaller firms specialised in providing one service type only, export to only one destination. There are, however, a few larger firms that diversify their international activity in ten or more foreign markets, offering a range of services, and they account for the vast majority of services exports. The distribution of firms' exports across countries is, however, more and more dispersed for firms that have a diverse number of trading partners, where each additional market accounts for a dwindling share of total services exports compared to the first foreign market. For instance, for firms that export to ten destination markets, the first foreign market absorbs 45% of their international sales, while the second market takes one quarter, and so on. Thus, even for firms engaging with up to ten destination markets, the first one is by far the market where they realise most of their international sales.

Table 3.6. Concentration within firms by main destination markets

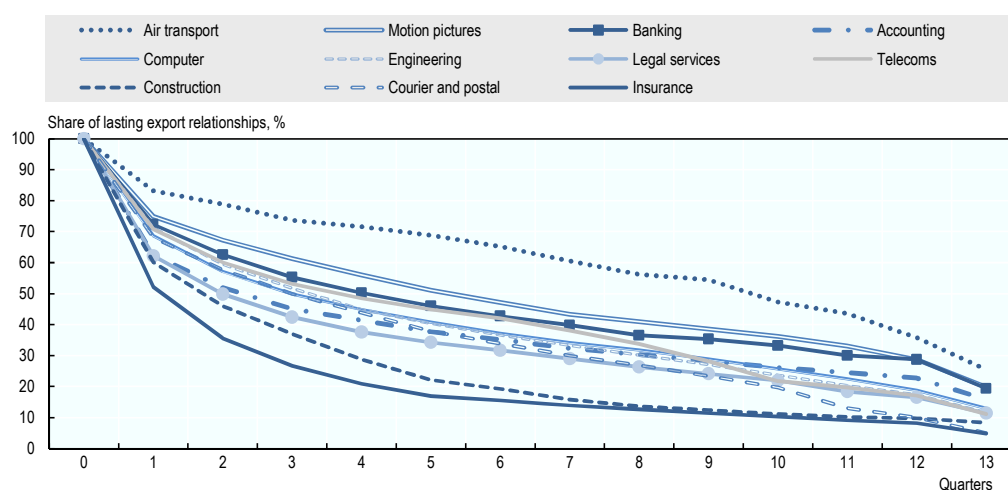
Average 2013-2017, percentage

Export market ranking	Share of market (all firms)	Share of market (Number of destinations=1)	Share of market (Number of destinations=2)	Share of market (Number of destinations=5)	Share of market (Number of destinations=10)
1	67.2	100	94.9	70.2	45.3
2	14.5		5.1	20.4	25.2
3	6.1			6.9	10.0
4	3.9			2.1	8.0
5	2.7			0.5	4.2
6	1.9				3.0
7	1.4				2.4
8	1.0				0.9
9	0.7				0.5
10	0.6				0.4

Source: Own calculations on ABS Survey of International Trade in Services data.

Furthermore, some firms only export occasionally, while others succeed in establishing longer-lasting trading relationships. Figure 3.8 shows that the largest share of one-time exporters is found in insurance services, where nearly half the exporting relationships cease after one quarter and only 5% of all firms manage to hold an exporting relationship for more than three years.²⁶ By contrast, 83% of all exporting relationships in the air transport services sector are still in place after one quarter. Unsurprisingly, this is also the sector where export relationships hold the longest: on average, around two-fifths of all air carriers continue exporting for over three years to the same destination.

Australian firms whose main activity is not services sectors also trade in services (Figure 3.9). The share of services exports by non-services firms is relatively important for construction (40%) and engineering services (30%), the latter being typically involved from the designing to the building stage of goods, but also mining sites. Hence, non-services companies in manufacturing and mining also engage in exports of engineering as well as construction services. Between 15% and 30% of firms exporting accounting, legal and computer services are non-services firms, although these firms only account for a small share of total services exports in these sectors. These might be goods-producing firms that could internalise additional functions such as data analytics, software development, accountancy and legal advice.

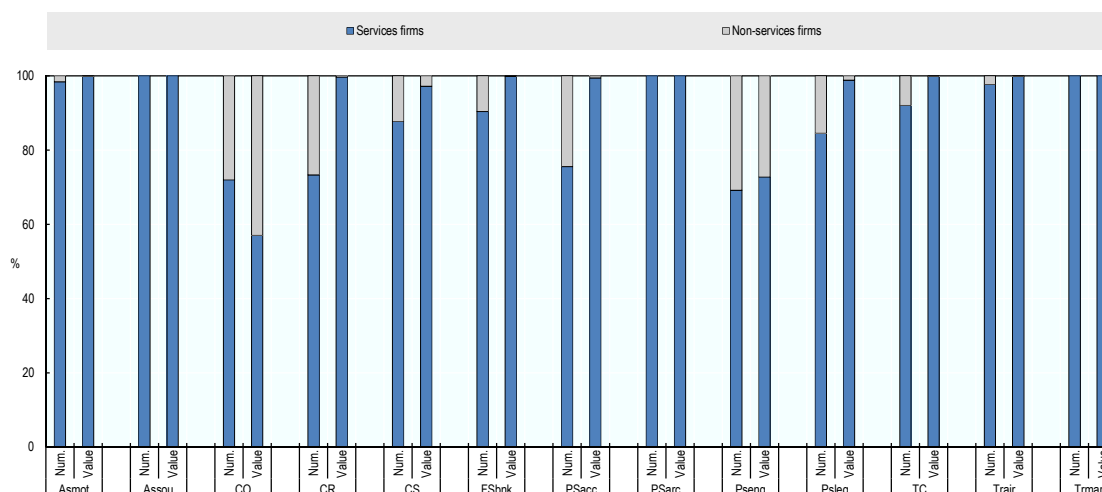
Figure 3.8. Continued exporting relationships

Note: The vertical axis measures the percentage of firms with a positive export volume in a given quarter that continue exporting the same service to the same destination market for at least the number of quarters indicated on the horizontal axis. Therefore, in correspondence of “0”, all firms observed exhibit a positive exporting relationship; whereas “1” is associated with the share of firms that continue exporting after one quarter, and so on.

Source: Own calculations on ABS Survey of International Trade in Services data.

Figure 3.9. Distribution of exports between services and non-services firms

By sector, average 2013-2017



Note: Within each services sector block, the first bar represents the share of services and non-services firms in the total number of firms observed in the sample, while the second bar reports the share of services and non-services firms' exports over total services exports for that particular sector.

Source: Own calculations on ABS Survey of International Trade in Services data.

In sum, Australian services exporting firms concentrate on just a few destination markets, and their low survival rates suggest the presence of fixed and variable trade costs; firms in Australia might face entry (and sunk) costs when entering new foreign markets, but once there, they might also experience extra variable costs adding to their business operations and making their experience in foreign markets short-lived. The next section examines this question more closely.

Regulatory barriers to services trading firms in Australia

The restrictions on services trade as measured by the OECD STRI affect not only Australia's services exports, measured at sector level, but also have different impacts on the firm-level exports of services firms depending on the firm's characteristics. This information is valuable for designing and implementing effective and well-targeted export promotion strategies.²⁷

The main findings are:

- Larger firms are more active in services exports than smaller firms. Comparing two firms, which differ by 10% in terms of turnover, the larger firm would export on average about 3% more services than the smaller firm.²⁸
- There is a very robust correlation between services exporters and services importers. Firms that also import services will export around 18 times more than firms that do not import services. This effect seems large, but must be seen in light of very low services exports of non-importers of services, so that an increase by a factor of 18 is applied to a very small base.
- The services exports of firms that are predominantly services providers are around double those of firms whose main activity is in a goods-producing sector.
- Country-specific control factors are as expected: the larger a country's GDP, the higher the value of Australian services exports to that country; the further away a country is from Australia, the smaller the value of Australian services exports to that country; more services are exported to other English-speaking countries.
- Regulatory barriers in the importing country, as measured by the OECD STRI, have a strong negative impact on the value of Australia's services exports to that country. In fact, reducing a country's STRI by 0.1 points could increase services exports of Australian firms to that country by about one-quarter.
- STRI barriers against services trade appear to bite most strongly for delivery Modes 1 and 2, but also for Mode 3. This is consistent with sector-level findings.
- Discriminatory restrictions and barriers to the establishment of trading relationships are related to the volume of Australian services exports.

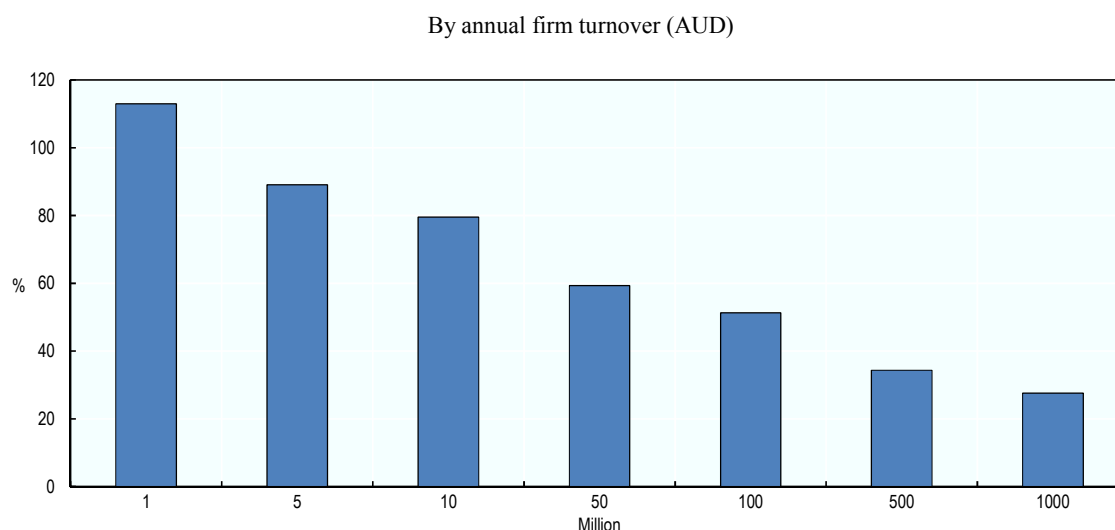
Not only is the ability of Australian firms to export to a given market significantly restricted by services trade restrictions, the heterogeneous impact of services trade barriers on firms with different characteristics is also noteworthy. The differential impact according to firm size (measured by turnover) is important, as is the distinction between firms with previous export experience and first-time exporters. Another relevant characteristic is whether a firm has export experience in specific markets or export experience in general.

There is a very strong correlation between firm size and the firm's ability to overcome barriers to services trade. While all firms export lower volumes of services to more

restrictive markets, exporting to more restrictive destinations is significantly easier for large firms than it is for small firms. In turn, this implies that small firms have more to gain from liberalisation of services trade. The reduction of a country's regulatory barriers can expand the contribution of small Australian exporters to total Australian services exports to that country. For example, reducing a country's STRI by 0.1 can be associated with an increase of 80% in the exports of small firms with an annual turnover of around AUD 10 million. By contrast, services exports of medium-sized firms with an annual turnover of AUD 100 million will increase by 51% and large firms with a turnover of AUD 1 billion will only experience an export growth of 28% (Figure 3.10)

These results underline that the detrimental effect of regulatory barriers on the diffusion of gains from open markets conceal substantial heterogeneity, particularly across firms, and that firms which are less affected by services trade restrictions in the first place have less to gain from a reduction of the STRI in a specific market.

Figure 3.10. Increase in export volume when STRI falls by 0.1



Note: Percentage changes indicate average export growth resulting from a reduction of the importing country's STRI by 0.1. Annual firm turnover is in AUD.

Source: Own calculations based on ABS Survey of International Trade in Services data.

Foreign Direct Investment

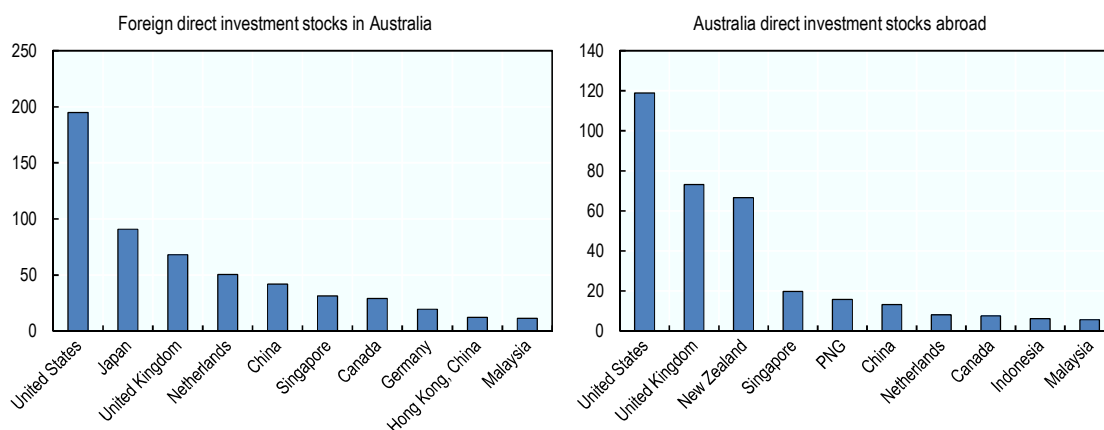
Since Australia's official trade statistics record only those economic transactions that occur between residents and non-residents, they do not pick up trade in services delivered by foreign subsidiaries or branches established in Australia, or by Australian affiliate companies established overseas.²⁹ It follows that trade flows delivered by Mode 3 are not included in trade data. Typically, the importance of Australian businesses abroad as well as that of foreign-owned companies providing services in Australia would be better assessed with Foreign Affiliate Trade Statistics (FATS). These data however are currently not available for Australia. The best proxy for these statistics is Foreign Direct Investment (FDI) data collected by the ABS.³⁰

In 2016, the stock of total Australian direct investment abroad in the services industry was worth AUD 218 billion, accounting for nearly 40% of total accumulated outward FDI.³¹ The largest shares were in Financial and Insurance services (31%), followed by Manufacturing and Mining (17%, each). Inward accumulated services FDI stocks were equally important, and worth AUD 288 billion in 2016 (about 36% of total foreign investment holdings in Australia). Not surprisingly, Mining accounted for the largest share of this stock (39%), followed by Manufacturing and Real Estate (around 11% each).

The main markets for Australian direct investment abroad were in the United States, the United Kingdom and New Zealand, accounting for 47% of total Australian foreign asset holdings in 2016 (Figure 3.11, right panel).³² The United States was also Australia's largest inward investor, followed by Japan and the United Kingdom, which were jointly responsible for 44% of foreign-owned investment in Australia in 2016 (Figure 3.11, left panel). More disaggregated ABS Survey of International Investment data permits a decomposition of bi-directional FDI stocks by country and by main industry, offering greater detail on the relative importance of these countries as direct investors or investment destinations for specific industries.

In terms of inward FDI stocks, the United States, Australia's largest direct investor, invested predominantly in the Mining industry, with AUD 122 billion in 2016, accounting for almost two-thirds of inward FDI from this country. The United States also invested in Manufacturing, with nearly AUD 30 billion, and in Financial and insurance services, with about AUD 10 billion.³³ Japan, the second largest Australian investor, focused on similar industries, with AUD 44 billion in Mining, AUD 15 billion in Manufacturing and AUD 9 billion in Financial services. The direct investment of the United Kingdom focuses mostly on Mining, with inward FDI stocks worth AUD 38 billion, various Services sectors (AUD 21 billion) and Manufacturing (AUD 8 billion).³⁴ The Netherlands, Australia's fourth largest direct investor is Australia's main owner of FDI stocks in the Services industry. Dutch investment in Australia was almost equally split between Mining and Services (47% and 42% of total inward FDI stocks in 2016, worth AUD 24 and AUD 21 billion, respectively). Most of the investment in services was in Finance (25% of total Dutch foreign direct investment), Distribution (5%) and Transport (4%).

Figure 3.11. Foreign direct investment stocks, 2016 (in AUD billion)



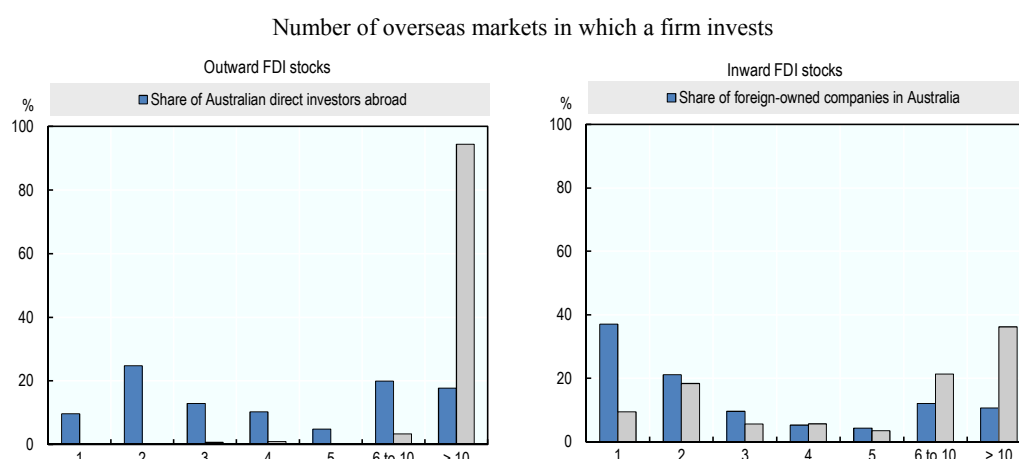
Note: Data refer to all industries, and not just services.

Source: Own calculations based on ABS FDI data, catalogue number 5352, Tables 2 and 5.

As seen in Figure 3.12 (right panel), Australian direct investment stocks abroad are mainly in the United States (worth AUD 118 billion in 2016), of which AUD 28 billion's worth was in Financial and insurance services, whereas direct investment in Manufacturing industry was valued at AUD 27 billion.³⁵ Several Australian businesses are also present in the Manufacturing industry in the United Kingdom, which, in 2016, accounted for nearly half of Australian direct investment holdings in that country, worth AUD 37 billion. Australian banks and insurance companies also participated in the capital of several such institutions in the United Kingdom, with FDI stocks worth AUD 34 billion in 2016. Australian direct investment in New Zealand was predominantly concentrated in Financial and insurance services, which accounted for nearly 80% (AUD 53 billion) of total FDI stocks in that country in 2016. Australian businesses were also engaged in the Distribution industry and in Construction in New Zealand, with FDI stocks in 2016 worth AUD 3 billion and AUD 2 billion, respectively. Singapore ranked fourth largest for Australian direct investment stocks in 2016 (AUD 20 billion). As expected, Singapore being a large financial hubs, most of Australia's direct investment stock was in Financial services (nearly 37% of its total FDI stocks in the country in 2016). Interestingly, Singapore was also the largest investment location for Australian investment stocks abroad in Transport and storage, with 54% of all Australian FDI stocks in this industry in 2016.

The concentration of international investment of both Australian businesses abroad and of foreign companies in Australia follows a striking pattern. Figure 3.12 (left panel) shows that less than one-fifth of Australian MNEs, present in more than ten markets overseas, account for nearly all total FDI stocks for 2012-2016. It is rather common for Australian businesses to invest in two foreign markets but the investment holdings in these markets are only moderate compared to the shares of Australian direct investment abroad by large MNEs with a more global footprint. The activity of foreign companies holding 10% or more ownership in Australian businesses is less concentrated (Figure 3.12, right panel). Nearly 40% of foreign-owned companies in Australia have some ownership ties with one foreign direct investing country. These are not, however, the companies with most of total inward FDI stocks. In fact, for 2012-2016, more than 35% of foreign direct investment stocks in Australia was from ten or more foreign sourcing markets.

Figure 3.12. Concentration of international activity, average 2012-2016



Source: Own calculations based on ABS Survey of International Investment data.

Finally, foreign investment holdings in Australia are not concentrated only in the mining sector, which was 36% of total inward FDI stocks in 2016. Australia's top three foreign partners, the United States, Japan and the United Kingdom favoured the Financial services industry. The Netherlands focused on services just as much as on mining, with holdings mostly in financial services, distribution and transport. As for Australian direct investment abroad, the most active services industry is finance. New Zealand and Singapore are important locations for Australian investment abroad in financial services, whereas Singapore hosts most of Australian outward direct investment in transport services, perhaps reflecting its strategic location, which makes it a good base to further investment in South East Asia. Australian investments abroad are highly concentrated, with a few large multinationals present in a large number of countries but responsible for most of outward FDI stocks. This might indicate that smaller Australian businesses face many more challenges in setting up a commercial presence abroad and are more impacted by regulatory barriers. The next section attempts to disentangle the effect of policy barriers on Australian direct investment abroad.

Behind-the-border barriers impact Australian investment abroad

The determinants of Australia's FDI stocks in six service sectors show a degree of heterogeneity across sectors.³⁶ Across all activities, Australian direct investment is greater in larger economies. Moreover, foreign countries with English as official language as well as closer destinations are more attractive to Australian investors. The greatest beneficial effect of a common language is in Logistics and Insurance services. The only sector for which geographical distance does not play a role is the Engineering sector. This is hardly surprising, since investment in engineering is more likely to be driven by the availability of natural resources so that Australian engineers can make use of their competitive advantage in mining-related engineering services independently of proximity to Australia.

By contrast, multilateral restrictions to services trade, measured by the OECD STRI, usually reduce the volume of Australian FDI stocks in a country. This effect is largest in Logistics, Audio-visual services and Insurance services.

Australian direct investment stocks in Distribution services, Insurance services, Logistics and Transport seems to be driven by market opportunities rather than tax considerations. By contrast, in the Engineering services sector, other things equal, the stock of Australian outward FDI is higher in countries with a lower tax rate on profits.

A more detailed analysis of the impact of regulatory barriers on outward FDI, based on the decomposition of the STRI by Mode of supply, shows that barriers to Mode 3 present significant impediments to Australian outward FDI stocks. Their negative effect is particularly pronounced in Commercial banking and Insurance services. However, other types of barriers can also restrict the ability of Australian companies to establish or acquire a subsidiary abroad. Barriers behind the border, which affect all Modes of services trade, are significantly related to lower volumes of direct investment abroad in Construction services and Logistics services. These barriers signal inadequate competition regimes and lack of regulatory transparency.

The only sector for which barriers to Mode 4 restrict the volume of Australian direct investment abroad is Engineering services. This sector relies on highly skilled workers and in some countries a protected professional degree; moreover, services in that sector are often supplied by a combination of a commercial presence and short-term visits by professionals.

A firm perspective on barriers to services exports

As part of the business consultation during the preparation of this report, an industry questionnaire was submitted to 45 selected Australia-based services companies in August-September 2017 (more than half of whom responded) in order to gather their perceptions and assessments of the potential barriers to service exports in Australia and the effectiveness of current government initiatives. The final sample was composed of 26 companies from a wide range of services sectors. They were very heterogeneous in size (nine small firms with annual turnover below AUD 3 million and fewer than 20 employees up to seven large firms with a turnover of more than AUD 200 million and more than 500 employees). Several main issues holding back the export expansion of Australian services firms were identified from the returned questionnaires.

All except one firm are active in foreign markets and about half of them own foreign subsidiaries. One third focuses predominantly on exporting, with foreign markets accounting for more than 50% of revenue in the last fiscal year. For another third, exporting was of only minor importance with less than 10% of their revenue earned abroad. Nevertheless, even firms with currently low export shares see potential for gaining market share abroad, with 70% reporting that demand in foreign markets is either much higher or higher than in Australia. Among firms with foreign subsidiaries, all except one continue serving the foreign market from home. This may happen because the Australian headquarters provides different services or serves different clients than the foreign affiliate, or because the foreign affiliate serves as an intermediary between the Australian headquarters and local clients.

China is among the three most important markets for nearly half the firms. Around 20% list Singapore, Malaysia and the United Kingdom among their most important export destinations. Also the United States and India are mentioned relatively often. Around 60% of firms use services from suppliers abroad. The most important source of services is India followed by China.

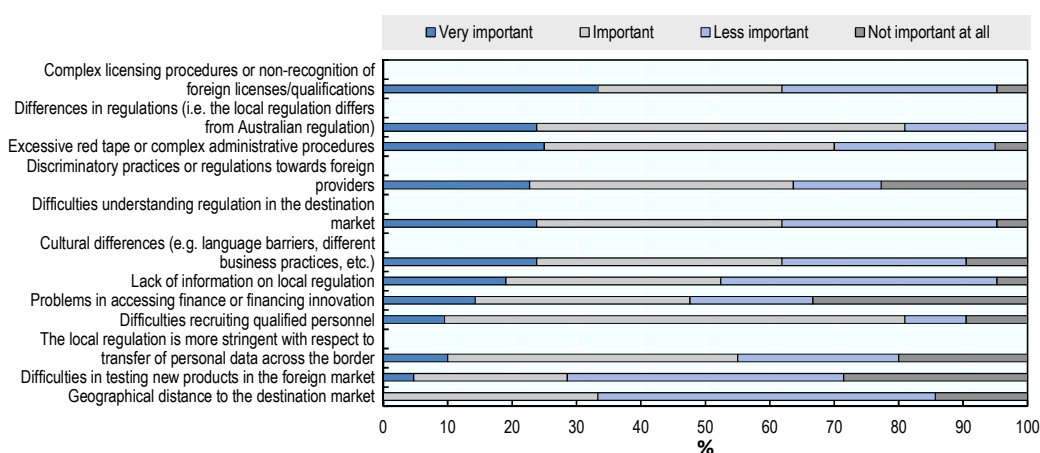
Overseas business visits are crucial for the activities of these companies. Only 15% of them do not report any business visits abroad. In particular, business visits are essential to get a first foot on the ground in a foreign market and to expand the customer base. Two thirds of all firms use business visits to get to know prospective clients abroad, around half of the firms in order to conclude business deals or negotiate contracts, and around 40% of all firms conduct market studies when going on a business visit. Other important reasons are visits to company subsidiaries, branches or affiliated companies abroad and quality control purposes in the case when suppliers or subcontractors from foreign markets are needed. Around 30% of firms mention that they visit government agencies and/or regulatory authorities abroad.

A major objective of the survey was to obtain evidence on the main obstacles faced by Australian services providers in foreign markets. Figure 3.13 summarises the results, showing that regulatory differences, red tape in foreign markets and the lack of qualified personnel are important or very important concerns for more than two thirds of services firms. Discriminatory practices and access to finance represent difficulties for just some of the services firms in the survey, while others are not affected by these. Complex licencing procedures or the non-recognition of foreign licenses/qualifications was considered very important by one third of the firms in the sample. Other challenges for services suppliers include understanding regulation in the destination market, cultural differences (e.g. language barriers, different business practices, etc.), the lack of information on local regulation and restrictions to the transfer of personal data. Geographical distance and the

testing of new products seem to be of less importance. This is no surprise, given the focus on services in the survey.

However, it is not only barriers abroad that restrict Australian services firms from exploring new markets. The most important domestic factors mentioned in the survey were an insufficient scale, high domestic costs and excessive red tape in Australia. The last aspect is consistent with the results of a recent survey of Australia's international business activity, which finds that more than 70% of firms considered red tape in Australia to be a major risk for their international operations. Respondents to this survey saw red tape becoming either very important or moderately important in the following three to five years (ECA, 2016).

Figure 3.13. Most important barriers to services exports



Source: Own calculations based on the results from industry questionnaires in August and September 2017.

In some cases, these difficulties imply that firms are not able to acquire new clients in new markets. Around 40% of firms report that they have already failed in their international expansion to new markets. A wide range of countries was mentioned in this context, including China, Hong Kong, China, India, Indonesia, Viet Nam, New Zealand, Saudi Arabia, Turkey and Singapore. Important reasons for failure were difficulties in establishing a key contact, lack of experience in the markets and lack of understanding of the regulations, lack of transparency, insufficient openness of the market to new services providers, and lack of government support.

This analysis shows that services exporters in Australia face a number of challenges. Foreign regulation is not always easy to deal with and may pose explicit entry barriers. However, there are also internal factors, such as the lack of contacts or the lack of experience which prevents firms from expanding internationally. Against this backdrop, the next chapter will describe some of the most important government initiatives that help Australian businesses to overcome these challenges in order to remain competitive and to succeed in international markets.

Concluding remarks

Chapter 3 provides detailed information on the patterns of Australia's services exports. The chapter highlights the most important services activities and most important destination markets for Australian services exporters; it benchmarks Australian services exports with the patterns of services world trade and identifies a number of barriers to services exports. The chapter also presents firm-level evidence for Australian services exporters highlighting the heterogeneous impact of trade restrictions on firms of different sizes and emphasising the challenge of continuously successful export performance. Finally, the chapter analyses patterns of Australian services FDI and presents results from a business questionnaire on services trade barriers. The key findings from this chapter are as follows:

- *Main trading partners:* Australia's most important trading partners are located in the Asia-Pacific region.³⁷ Travel services dominate aggregate exports and imports, while business services are of high importance for exports to the United States and Singapore.
- *Comparative advantage:* Australia's global comparative advantages are primarily in travel services and in particular in education services. At the regional level, Australia has a comparative advantage in the Asia-Pacific region in a high number of sectors, above all in insurance services and personal, cultural, and recreational services.
- *Recent trade performance:* during the last 15 years, Australia has been losing ground in services exports, particularly in its previous strongholds. The performance of Australia's exports of education-related and other personal travel have lagged their export growth potential. Australia's capacity to capitalise on its proximity to fast-growing markets, and in particular to benefit from growing Chinese demand for travel services, appears to be facing headwinds. However, Australia is still one of the most successful exporters of tourism services, as measured by its comparative advantage. Therefore, the recent decline may reflect shifts in the preferences of Chinese visitors rather than a structural weakness of the Australian tourism sector.
- *Bilateral export patterns:* policy barriers represent major impediments to services trade. Services trade restrictions in foreign countries prevent Australia from exploiting its full export potential. Barriers to Mode 3 and barriers behind the border towards all Modes of services trade are particularly importance for cross-border trade as well as for Australia's direct investment abroad. Additional benefits could result from regulatory harmonisation.
- *Determinants of travel services exports:* high-quality education helps to attract foreign students. Education-related travel and online provision of education services are particularly promising fields for Australia as these segments are less affected by geographic remoteness than other personal travel.
- *Dependence on regional demand:* Australia depends heavily on exports to China. A 1% reduction of demand growth in China could cost Australian services suppliers AUD 7.7 billion, based on 2015 values.³⁸ In some sectors, such as education, the dependency on Chinese demand is even double this.
- *High concentration of Australian services exports and FDI:* only 20% of services exporters, engaged in ten or more foreign markets, are responsible for around half

of Australia's services exports. However, even exports of these firms are still relatively concentrated, with almost 50% going to their largest market. Hence, diversification across markets and across firms is key to increasing the contribution of services trade to the Australian economy. Reducing services trade restrictions can help to raise the number of exporters, since small and medium-sized are held back more than large corporations by regulatory barriers, and might either not export at all or only export to a limited set of destinations.

- *Firms struggle to keep exporting*: few firms manage to export to the same destination for a sustained period of time. In Australia, the largest shares of one-time exporters are found in insurance services and construction. There is potential for economic gains, because re-entry into an export market is significantly more difficult than continuous exporting, and even more so in the presence of high regulatory barriers in the importing country.
- *Larger benefits for SMEs*: smaller businesses have more to gain from services trade liberalisation than large firms. On average, firms with an annual turnover of around AUD 10 million can grow their exports by 80% if an importer reduces its STRI by 0.1 and the probability of such a small firm exporting increases by 25%. By contrast, large firms with a turnover of AUD 1 billion will only experience export growth of 28% and there is no positive effect on their export probability.
- *Obstacles to Australian direct investment overseas*: services trade barriers restrict Australian outward FDI stocks. This is especially so for logistics services, audio-visual services, insurance services and distribution services. For engineering services, which rely on highly skilled workers often with a protected professional degree, even barriers to the movement of people represent significant barriers to outward FDI. Overall, this analysis highlights the importance of barriers to commercial establishment abroad for outward foreign investment. However, a more robust analysis of Australian services trade via Mode 3 is not possible because data on foreign affiliate sales in Australia are lacking. This is a major shortcoming, since analysis based on Foreign Affiliates Trade Statistics (FATS) would be extremely relevant for the formulation of economic policies.³⁹

Based on these findings, the next two chapters seek to identify main barriers to Australian services exporters, focusing on key markets such as the United States, the United Kingdom, New Zealand, China and India. Chapter 4 presents the regulatory regime, as described by the OECD STRI, observed in a selected number of economies for financial services and professional services. Chapter 5 presents case studies on services trade barriers in the areas of education, tourism, health, METS and ICT.

Notes

1. Improvements made to the model ABS uses to estimate trade in travel services, and access to updated data sources, led in August 2017 to changes to a range of international trade in services data. The changes made to the travel model resulted in revisions to both exports (credits) and imports (debits) across the entire time series for international trade in travel services. Other services categories had smaller revisions due to updated data sources. The international services trade data used throughout this publication are taken from publications prior to August 2017, and thus are not the latest data available. However, the revisions applied to the international trade in services data did not significantly alter the economic storyline

presented throughout this chapter, as the original data remain comparable with the previous ABS data. For more information on the revisions to international services trade data please refer to the following ABS publication, Information Paper: Changes to the Australian System of National Accounts, 2016-17 (catalogue no. 5204.0.55.012).

2. For more details on the geographical breakdown of Australian services trade, see Tables A C.4 and A C.5 in Annex C.
3. Education services and Education-related travel services are used interchangeably throughout the publication, although they refer to Education-related services under the Travel category as reported in Australian Balance of Payments. Likewise, Other personal travel services, largely including tourism-related activities, might be referred to as Personal travel services, but effectively refer to the above-mentioned sub-category.
4. Measured by the Balassa (1965) index of Revealed Comparative Advantage (RCA), which, for a given sector, is the ratio of its share in Australia's exports relative to the same sector's share in OECD exports. A value above one means that the sector's share in Australia's export basket exceeds that of the average OECD country, and "reveals" that Australia is more competitive in the sector than the average OECD country. Conversely, an RCA below one indicates a relative lack of competitiveness.
5. The calculations in Table 3.1 also cover the main divisions of trade in goods, implying that fewer services will achieve a RCA index above one than when only looking at the services sector. A further shortcoming of RCA measures based on gross trade data is their inability to allow for geographical production fragmentation. Gross trade data do not show the value added contributed by countries (firms) within each stage of production, so that "countries engaged in assembly activities at the end of a high-tech value chain will appear to have a relative comparative advantage in the manufacture of high-tech goods, whereas the truth would more accurately reflect a comparative advantage in cheap labour" (Ahmad et al., 2017). Thus, countries with high foreign content in some activities might have relatively high RCAs that do not reflect a genuine comparative advantage in those areas – e.g. Ireland and Luxembourg in Table 3.1.
6. The item Personal, cultural and recreational services includes audio-visual services, but also education services, health services, recreational services and other personal services.
7. Some OECD countries do not report a geographic breakdown of services exports for some sectors, potentially leading to inflated results of revealed comparative advantage. A case in point is construction services where US construction services export cannot be considered due to the lack of bilateral trade data, thereby overstating Australia's RCA index with that region. Also other extreme values, as for Personal, cultural and recreational services towards Asia & Oceania, are inflated by missing export values for OECD countries.
8. While comparative disadvantage can be counteracted by investing more in fast-growing sectors in the long run, comparative advantage in the short run is given by past investment in physical and human capital.
9. Using the Shift-Share Analysis (SSA) technique, which decomposes the change in Australia's total exports into four components: a global demand component (GLOBAL), indicating the potential growth rate of Australian exports due to overall growth in world services trade; a product composition component (COMPOSITION) that may boost or reduce the growth potential depending on whether Australia's mix of services exports is concentrated in fast or slow growing segments of the world market; a geographical component (GEOGRAPHY) that enhances or reduces growth potential depending on whether Australia's geographical distribution of trade is concentrated in fast or slow growing countries of the world market; and a residual component (PERFORMANCE) that is positive if Australia is performing better than expected, on the basis of the growth potential defined by the sum of the other components

(GLOBAL, COMPOSITION and GEOGRAPHY), and negative otherwise. This technique was developed in regional science to evaluate the performance of a city or a region within a country. It has also been used in the trade context, e.g. by Piezas-Jerbi and Nee (2009), to analyse shifts in the global market shares of goods for different countries after the Uruguay Round in 1995. More details in the Annex.

10. Brunei Darussalam does not report import statistics by sector. Malaysia's import data contain a statistical anomaly in education-related travel services for 2009-2010 that grossly distorts results if included.
11. The analysis ignores exchange rate fluctuations, which can be a major driver of export performance. Currency depreciation makes exports more competitive and so may allow for higher export prices in domestic currency, although prices in USD may fall if the pass-through is imperfect. However, exports in USD may fall mechanically as long as price discrimination does not exist between services exports and domestic services sales.
12. Relative export performance means the growth rate of Australian exports in a specific market, a specific sector or a specific market-sector combination, minus the growth rates of global imports in that market (sector, market-sector combination).
13. STRI heterogeneity indices involve a pairwise bilateral comparison of policy measures included in the OECD STRI regulatory database. Not surprisingly, Australia's STRI heterogeneity indices are lowest with New Zealand and highest with Indonesia.
14. The analytical tool typically used to identify and quantify the effects of various factors on bilateral trade patterns is the gravity model (Anderson and Van Wincoop, 2003; Kimura and Lee, 2006; Helpman et al., 2008). It is essentially a multivariate regression, whose coefficients identify effects of individual variables when all other relevant variables are controlled for (i.e. are assumed to remain constant). Findings reported in the text come from a gravity model estimated with a Pseudo Poisson Maximum Likelihood (PPML), following Santos and Tenreyro (2006, 2011), with data on 6 EBOPS services sectors (transport, construction, insurance and pension services, financial services, telecommunications, computer and information services, and other business services) to 23 individual trade partners during 2014 to 2016. Table C.6 in the Annex C reports the regression results.
15. Among the countries covered by this analysis, Australia has a common official language with Canada, India, Ireland, New Zealand, South Africa, United Kingdom and the United States.
16. The following FTAs including specific provisions on services trade were considered: AANZFTA (2012: including Indonesia), Japan (2015), Korea (2015), New Zealand (1989), Chile (2009), United States (2005).
17. The empirical analysis highlighted a positive and significant impact on bilateral trade in sectors such as professional services, telecommunications and financial services when FTAs included higher levels of commitments. For more details see Lamprecht and Miroudot (2018).
18. A gravity model was used to estimate the determinants of bilateral travel services exports. Data on exports of travel services come from the OECD International Trade in Services Statistics by Partner Country (ITSS) (EBOPS 2010 when available, otherwise EBOPS 2002) for the period 2005-2015. Data are available on Australian exports of travel services for over 30 countries included in the analysis (available on request). Table C.7 in the Annex C reports the regression results.
19. Information on the restrictiveness of trade in travel services is not available from the STRI.
20. FTA information available from the WTO's Regional Trade Agreements database (including whether the agreement was notified under both Article XXIV of the GATT (goods) and Article 5 of the GATS (services)).

21. Results quoted in the text come from a simulation based on the OECD-WTO TiVA database.
22. The figures take account of both the direct impact on the demand of final products and the indirect impact on the exports of intermediate goods and services. Therefore, they also include intermediate goods and services with a production stage in other regions before the final product is consumed somewhere in Asia. For example, Australia may deliver financial services to an automotive company in Europe that produces for the Asian market. See the input-output section in Annex B for details.
23. These trade flows include Modes 1, 2 and 4 (Box 1.1). Mode 3 of services trade (commercial presence) is not included in these data.
24. These figures are not fully comparable with aggregate ABS statistics, since the sector coverage is not the same and so does not quite match the broader sample of trading firms underpinning ABS published data.
25. The first year reported in the table is based on partial data reflecting methodological changes that occurred in 2013. Hence, only the last two quarters of 2013 are considered as first year in the descriptive analysis. Although not reported in Table 3.5, the first quarter of 2017 (the only available at the time of the analysis) is also included in the remaining the summary statistics.
26. The short duration of these relationships might reflect firms' decisions to serve a foreign market via cross-border exports before establishing a more permanent activity. This could apply to insurance providers, for which proximity to foreign clients is crucial, but also for other services (e.g. construction) where companies with long-term construction projects abroad whose operations would benefit from a more permanent presence. Moreover, exchange rate fluctuations might explain the short length of export relationships observed in the data, although this argument is valid more generally for exporters of all services sectors
27. The analysis is based on a gravity model analysing firms' cross-border services exports, drawn from the ABS Survey of International trade in Services. Ten sectors covered by the OECD STRI are included: motion pictures, sound recording, computer services, commercial banking, accounting services, architecture services, engineering services, legal services, telecommunications and maritime transport. Table C.8 in the Annex C reports the regression results.
28. For example, Table 3.5 shows that, in 2016, the average Australian firm in the ABS services trade survey had a turnover of AUD 667 million and services exports of AUD 20 million. The model predicts that a firm with a turnover of AUD 734 million would export services worth AUD 20.6 million. A substantially larger firm with a turnover of AUD 1 334 million could be expected to export services worth AUD 27.5 million.
29. Australia's trade statistics are based on Balance of Payments data, which consider affiliates established overseas to be resident in the host country. The ABS Balance of Payments statistics follow international reporting standards for services transactions, which are classified according to the Extended Balance of Payment Statistics (EBOPS 2010) classification. EBOPS 2010 is based on definitions and guidelines outlined in the sixth edition of the IMF's Balance of Payments and International Investment Position Manual (BPM6).
30. FDI data may provide relevant insights into the importance of international activity of services affiliates, but there are still some differences between FDI and FATS; hence, care should be exercised when interpreting FDI data as proxy for foreign affiliates' activities. One difference is that FDI refers to cases where an entity owns at least 10% of a foreign business, while in FATS, the company would own at least 50% of the foreign affiliate. Moreover, FDI data reflect the country of the intermediate investor and not where the ultimate owner is. This might be problematic when the investment transits through third party countries or financial centres, where holding companies might be incorporated to benefit from a more favourable taxation

regime. Finally, FDI data are collected on the basis of the main activity of the company investing overseas and might not match the main activity of the affiliate abroad.

31. Services shares and values are extracted from the ABS catalogue 5352. They cover construction services but exclude industries such as electricity, gas, steam and air conditioning supply, and water supply, sewerage, waste management and remediation activities. Services values and shares referred to in the text also exclude confidential data not published by the ABS. The relative importance of financial services in outward FDI stocks is confirmed by more disaggregated ABS FDI data (not reported here). On the inward side, the sectors absorbing large shares of total inward FDI in services were distribution, finance and telecoms.
32. As discussed above, caution is needed when interpreting ABS FDI data by country. The country allocation of investment stocks is based on the immediate country of residence of the creditor in the case of Australia's foreign liabilities, or of the debtor in the case of Australia's foreign assets. The country of residence of the ultimate beneficial owner/recipient is not identified.
33. The United States was also the largest direct investor in Australia's Accommodation and Food services industry, accounting for more than two-thirds of total inward FDI stocks, and in Professional, Scientific and Technical Services, responsible for 63% of total inward FDI stocks in the industry.
34. The United Kingdom's FDI stock holdings in Australian services industries was over 30% of its total asset holdings there; as the breakdown by specific services industries was not fully disclosed by the ABS for confidential reasons, no specific industry can be singled out.
35. Only partial information is available for the level of Australian direct investment in the United States due to confidentiality restrictions. Data for industries such as Mining, likely to absorb a considerable share of Australian investment in the country, and several other services sectors, have not been disclosed by the ABS.
36. A gravity model was estimated using ABS Survey of International Investment data. The sectors covered are *audio-visual services, construction, distribution services, commercial banking, insurance services, logistics, engineering services, telecommunications, and transport*. Table C.9 in the Annex C reports the regression results.
37. The Asia-Pacific region, of which Australia is part, is vast. Beijing is 8 943 km from Sydney, but only 8 136 km from London. A degree of regional integration like that of, say, Western Europe would be hard to achieve
38. A 1% reduction of final demand in China reduces services output by 0.32%. In 2015, total services output in Australia was valued at AUD 2 400 billion.
39. The United Nations Manual on Statistics of International Trade in Services 2010 recommends that FATS data are collected and cover at least the following basic measures of foreign affiliate activity: sales (or turnover) and/or output; employment; value added; exports and imports of goods and services; number of enterprises (United Nations, 2010).

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Chapter 4. Global markets for Australian services

Chapter 4 looks at the various factors that particularly influence the ability of Australian firms to compete internationally in key services markets. In Australia's main destination markets, various obstacles may inhibit the entry of new firms or restrict the expansion of Australian exporters already engaged there. This chapter presents the main trade barriers found in some of Australia's major trading partners for services exports emerging from an analysis of the OCED STRI database.

Evidence from a recent survey of Australian business drew attention to the numerous challenges faced in their most important overseas markets, including interpreting and adapting to local regulation, discriminatory practices favouring local firms, and heterogeneity of licensing requirements and national standards.¹ This chapter examines the major obstacles influencing the ability of Australian firms to compete internationally in key services sectors.

The importance of financial services and professional services

Financial services and *Other business services* are among the largest contributors to Australia's total services exports after *Travel* and *Transport*, accounting for about 20% of Australia's total services exports in 2016.² The total value of Australian *Financial services* exports was AUD 3.5 billion in 2016 (5% of total services exports), a three-fold increase since 2000. The United States has replaced the United Kingdom as Australia's main destination market for financial services exports (Figure 4.1, left panel). Today, these two countries alone account for nearly 40% of Australia's total exports of financial services. In the Asia-Pacific region, the People's Republic of China's (hereafter "China") share increased in importance from a little over 2% in 2000 to nearly 9% in 2016. Other markets in the region have also seen an increase in their importing shares, some of which, most notably Singapore, have become almost as important as traditional destination markets like New Zealand.

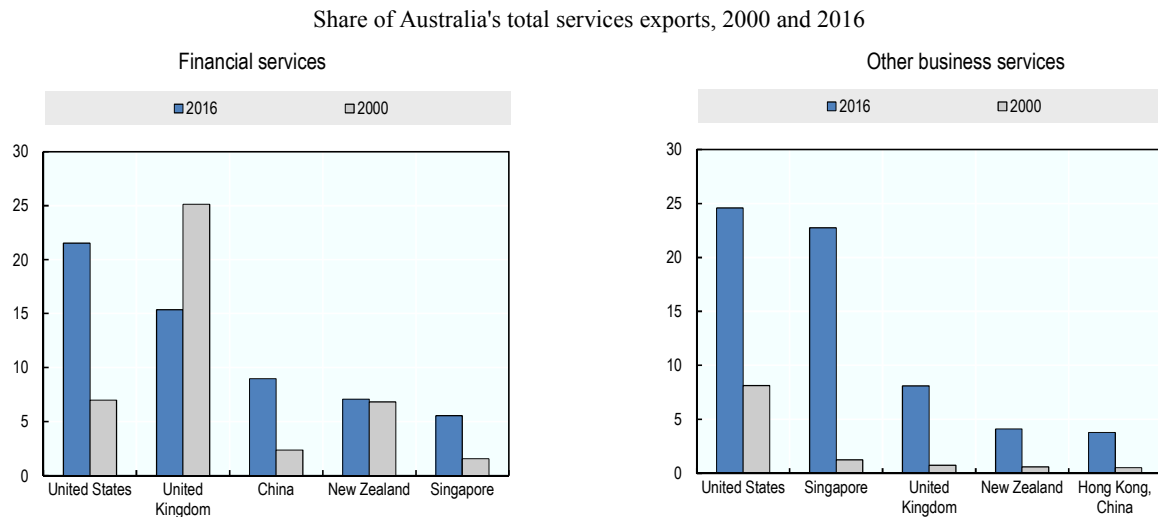
The value of *Other business services* export in 2016 was AUD 9.8 billion (14% of total services exports), consisting mostly of exports of professional services like legal, accounting and auditing, architecture and engineering services. The total export of these professional services in 2016 was about AUD 5.7 billion, about 8% of Australia's total services exports. The top three destination markets for *Other business services* in 2016 were the United States, Singapore and the United Kingdom, absorbing more than half of Australia's total exports of such services (Figure 4.1, right panel). A geographical breakdown of professional services exports is not available for Australia.

These estimates however do not reflect the full picture as they cover services provided by Modes 1, 2, and 4, but do not capture services delivered by Mode 3 (Australian branches or affiliates overseas). Information on Australia's Mode 3 services exports, typically found in Outward Foreign Affiliates Trade Statistics (FATS), is only available in the form of *ad hoc* surveys and specific studies. A one-off survey from the ABS in 2002-03 found that Mode 3 services exports were about twice the value of services exports through other Modes of supply.³ Most of Australian affiliates' services sales were realised in the United States, the United Kingdom and New Zealand, which jointly accounted for 74% of total affiliates' sales in the services sector. The same survey also estimated that the value of exports of professional services via commercial presence abroad was similar to the total value of exports through all other Modes.⁴

A more recent ABS survey of 1 245 Australian finance and insurance affiliates abroad found that commercial presence abroad was the main supply Mode for Australian financial and insurance services in 2009-10.⁵ This activity was valued at AUD 38.9 billion (covering both explicit and implicit financial services). Sales via commercial presence abroad accounted for nearly 96% of Australia's global export of financial and insurance services in 2009-10 (cross-border exports earned just AUD 1.4 billion). Nearly all sales of financial and insurance services by Australian affiliates were made to local residents in the host country, indicating that these affiliates were established primarily to serve the markets

where they were domiciled. Over half of overseas affiliates' sales occurred in New Zealand, the United States and the United Kingdom.

Figure 4.1. Australia's top five destination markets for selected services



Source: Own calculations on OECD ITSS EBOPS 2010.

Nonetheless, the ability of Australian services providers to establish a presence in foreign markets is influenced by various factors, including policy-induced entry barriers and behind-the-border obstacles. Australia has tried to address barriers at the border by pursuing services trade liberalisation through multilateral, regional and bilateral trade agreements. The Australian Government has concluded free trade agreements to facilitate Australian services providers' access to some of the most important markets around the world.⁶ These agreements include commitments on the four Modes of supply of services covered by FTAs. Box 4.1 describes key commitments on foreign direct investment and the movement of people included in these agreements. FTAs also address aspects related to behind-the-border barriers by including specific chapters on investment and services (including financial services and telecommunications), competition policy, intellectual property rights and e-commerce. However, despite all past and ongoing efforts, barriers to services export and foreign investment in foreign markets are hard to weed out.

These barriers may prevent Australian firms, and especially smaller and newer businesses, from expanding via exporting, or they may raise operating costs for those firms that have already entered a foreign market but due to discriminatory practices or higher compliance costs, cannot trade as much as they would in more open and competitive markets. The OECD STRI regulatory database allows the assessment of barriers faced by Australian services exporters. The database records restrictions applying on a multilateral basis, in accordance with the most-favoured nation principle, although the discussion in this chapter also takes into account cases where preferential access is granted to Australian services suppliers through one of Australia's several FTAs.

Box 4.1. Commercial presence and movement of people in Australia's bilateral FTAs

ChAFTA: China allows a commercial presence to be set up for the delivery of services in certain sectors. These include health, aged care, education services, shipping, architecture and urban planning, legal and mining services, as well as financial services including banking, insurance and funds management. With respect to the movement of people, China guarantees access to Australian citizens and permanent residents as (1) intra-corporate transferees for an initial stay of up to three years (including executives, managers and specialists); (2) contractual service suppliers for an initial stay of up to one year, or longer if stipulated under the relevant contract; (3) installers and maintainers for up to 180 days; and (4) business visitors for up to 180 days.

JAPEA: Japan improves opportunities and protection for Australian investors in Japan with provisions to ensure non-discrimination. Japan provides access for (1) intra-corporate transferees for up to three years (including executives, managers and specialists); (2) investors for up to three years; (3) professional and contractual service providers for up to three years; and (4) business visitors for up to 90 days.

KAFTA: Korea improves protection and access for Australian service suppliers through the reduction of market access barriers in sectors such as telecommunication, legal services, as well as accounting and tax agency services. Moreover, Korea provides access for (1) intra-corporate transferees for an initial stay of up to three years (including executives, managers and specialists); (2) traders and investors for up to two years; (3) contractual service suppliers, in certain sectors, for up to one year; and (4) business visitors for up to 90 days.

MAFTA: It guarantees Australian investors the right to majority ownership in companies in a wide range of sectors, including higher education services (100%), investment banking and direct insurance services (70%), telecommunications (70%), and accounting (100%). MAFTA also extends the scope of commitments on business visitor to include goods sellers and investors, permitting them to stay in Malaysia for a period of 90 days.

ACIFTA: It improves opportunities and protection for Australian investors in Chile, securing market access in many sectors of the economy. Chile commits to provide temporary visas with unlimited opportunities for renewal and with the right to obtain an identity card for business visitors (three months or twelve months for service sellers), contractual service suppliers (initial period of up to one year, with possibility of further stay), and intra-corporate transferees (initial period of up to four years (managers or executives), or two years (specialists), with the possibility of further stay).

AUSFTA: The Agreement contains commitments ensuring a liberal services trade environment beyond those at the WTO in a wide range of sectors, including educational, financial and professional services.

TAFTA: Thailand allows majority Australian ownership in various sectors, including mining operations (60%), distribution services in relation to goods manufacturing (100%), certain construction services (100% with minimum paid-up registered capital of THB 1 000 million), management consulting services provided through regional operating headquarters (100%), major restaurants or hotels (60%), tertiary education institutions outside of Bangkok specialising in science and technology (up to 60%) and supporting services for maritime transport, excluding cargo handling (60%). Moreover, Thailand grants access to (1) intra-corporate transferees for an initial period of one year, extended annually for a total of five years (with a limit of ten foreign persons per firm); (2) contractual services suppliers for an initial period of one year, extended on a yearly basis for a total of three years (with a limit of ten foreign persons per firm); (3) business visitors for up to 15 days and up to 90 days if APEC Travel Card Holders.

SAFTA: Recent updates to SAFTA (from 1 December 2017) strengthen non-discrimination requirements with respect to services supplied through a commercial presence. Moreover, Singapore allows Australian independent executives and contractual service suppliers an initial temporary stay of up to two years; three years (up to 15 years) for Australian intra-corporate transferees and up to three

months for Australian installers and services providers.

ANZCERTA: The Australia-New Zealand Closer Economic Relations Trade Agreement allows most services to be traded free of restriction. Mutual recognition of occupations removed impediments to the movement of skilled personnel between jurisdictions without the need for complete harmonisation of professional qualifications. Investors in each country benefits from lower compliance costs, higher screening thresholds and greater legal certainty.

The rest of the chapter describes the regulation of financial services and professional services in the key markets of China, New Zealand, the United States and the United Kingdom. India is also included given its potential to become an even more important trading partner in the near future, including through a possible India-Australia FTA.⁷ This comparative analysis aims to highlight the benefits of a liberal regulatory regime for cross-border trade in services, while also revealing the potential for further liberalisation in the future.

Financial services

Trade in financial services occurs via all four Modes of services trade. An example via Mode 1 is when a client uses a foreign bank account. Withdrawing cash from an ATM in a foreign country is an example of consumption of financial services abroad (Mode 2). Trade via Mode 3 occurs when consumers buy an insurance policy from a foreign-owned insurance company in their country. Finally, Mode 4 of trade in financial services includes insurance intermediators travelling abroad in order to advise their clients.

Cross-border trade in financial services (Mode 1) often is severely restricted, although some countries give preferential treatment. For example, the Protocol on Trade in Services to ANZCERTA allows cross-border trade for all types of services.⁸ However, New Zealand, China, India, the United States and the United Kingdom all apply a multilateral policy requiring foreign banks to establish a commercial presence in the country before offering deposit taking and payment services. Of the five, only the United States allows lending services on a cross-border basis without commercial establishment in the country. In the insurance sector, New Zealand has multilaterally liberalised its cross-border regime so that all types of insurance product can be supplied without a commercial presence. In China, this is only possible for reinsurance services, while in the United States reinsurance as well as maritime, aviation and transport (MAT) insurance can be traded without commercial establishment.

The requirement to establish a *commercial presence* (Mode 3) in order to provide cross-border services may severely limit the ability of Australian financial services companies to reach foreign markets. While commercial establishment is possible in all major economies, it often comes with many conditions. In India, there is a foreign equity limit of 74% of the shares of existing local banks. Screening of such investment applies if the share of foreign equity goes above 49%; also the screening does not explicitly consider economic interests. Insurance companies must be Indian majority-owned but no screening is being applied.

In China, a maximum of 50% foreign equity is possible for life insurance companies, while fully owned subsidiaries are allowed in the other segments of the insurance markets.⁹ China also allows fully owned foreign banks, while foreign participation in domestically funded banks is capped at 49% according to the ChAFTA of 2015.¹⁰ Moreover, China screens foreign investments to permit only those that promote economic development and confer clear economic benefits to the country. New Zealand, the United States and the

United Kingdom, all allow fully owned foreign subsidiaries in financial services and they apply a screening procedure for which economic interests are not explicitly mentioned.

Licensing procedures may also restrict the commercial presence of foreign financial services companies. Licensing is meant to ensure the financial stability of new banks and insurance companies, and should not be abused to protect incumbents or to discriminate against foreign-owned firms. Nevertheless, in China, India and the United States, quotas or economic needs tests are applied when allocating licences for commercial banks. In the insurance sector, economic needs tests are applied in China and India. While the damage of such regulation depends on each country's characteristics, it can lower efficiency and competition within the banking sector. In addition, in China, India, and (less so) in the United States, licensing criteria are more stringent for foreign banks and insurance companies than for domestic companies. The same is true for reinsurance companies in India, precluding foreign-owned firms from competing on a level playing field with domestic firms. In the United States, applicants for insurance licences need not be told why a licence has been denied. Moreover, only China and the United Kingdom have a time limit for application decisions.

Once having entered a country, banks may struggle with regulations that inhibit their geographical expansion and growth of business activities. For example, in India a bank must open at least 25% of its branches in unbanked rural centres with a population of less than 10 000 inhabitants.¹¹ In China and India, growth of foreign-owned banks is complicated by restrictions on raising capital domestically in the host economy. In both countries, issuing domestic securities is not possible for foreign-owned banks.

In several countries, financial services firms are not free in their choice of board members. In India, a majority of board members of banks must be Indian nationals. In New Zealand, the Reserve Bank requires some board members of banks and insurance companies to be New Zealand residents (the required number of residents depends on the size of the board, usually less than half). In the United States, all directors of commercial banks regulated by the National Code on Banks and Banking must be US citizens and at least a majority of the directors must reside in the State where the company is located.¹²

Competition policy can be a major obstacle to entry for foreign-owned financial services providers, affecting commercial presence as well as cross-border supply. Weak enforcement of competition rules benefits established suppliers, which are usually domestic companies. Regulation of rates or fees and excessively complicated regulatory procedures may prevent more productive foreign suppliers from competing on price with domestic firms. For example, insurance companies in China and India need prior approval from the supervision authority to adopt new products or services, and to introduce new rates or fees. Approval for new products is also compulsory in the United States. For commercial banking services, prior approval for rates and fees as well as for new products is required only in China.

China and India both heavily regulate the prices of financial services. Premiums and fees of insurance contracts are regulated by the *Insurance Law* of China. The Tariff Advisory Committee of India's Insurance Regulatory and Development Authority (IRDA) may control and regulate the rates offered by insurers in the non-life segment. Commercial banks in India face an interest rate ceiling for deposits by non-residents in foreign currency, while in China there is a lower limit on deposit interest rates. In addition, both countries apply directed credit schemes, obliging commercial banks to allocate a certain share of their total credit volume to sectors or regions of particular priority for the government.

Where banks hold strong bargaining power relative to consumers, regulation must be in place to ensure the fair pricing of services. However, conditions and fees for early repayment of loans are not regulated in China and India. This shortcoming severely affects consumers' ability to restructure their debts. Regulation in the United Kingdom does not explicitly include product tying in the list of unfair contract terms. Nevertheless, the prohibition of unfair commercial practices has been interpreted in some competition cases as covering tying and bundling. The enforcement of fair competition also requires independence of the supervisory authority from direct or indirect interference of the government. Nevertheless, the China Banking Regulatory Commission, China Insurance Regulatory Commission and China Securities Regulatory Commission are under direct authority of the State Council, which can overrule the decisions of the supervisor. In addition, the supervisory agency's funding is under discretionary control by the government in both China and India.

Many countries have adopted the International Financial Reporting Standards (IFRS) for the reporting of large or publicly listed local companies.¹³ In China, companies must comply with the Chinese Accounting Standards for Business Enterprises, issued in February 2006. The national standards, however, substantially converge with IFRS. The 2015 Indian Accounting Standards Rules (Ind AS) are also largely in line with IFRS Standards. However, section 5 of the Ind AS Rules explicitly excludes banks and insurance companies from applying these standards. Instead, they must follow standards prescribed by the Reserve Bank of India (RBI). In 2016, the Ministry of Corporate Affairs announced that banks and insurance companies will have to implement Ind AS rules from 1 April 2018 onwards (Government of India, 2016).

The Basel Capital Accords, issued by the Basel Committee on Banking Supervision (BCBS), are important risk-weighting procedures for international harmonisation, and have been adopted by many countries. New Zealand has only adopted the main elements of the Basel Capital Accords, sometimes taking a more conservative approach to bank capital policy (Reserve Bank of New Zealand, 2015).

The movement of natural persons (Mode 4) is impacted by a country's general visa policy but also by sector-specific recognition of qualifications and requirements on professional education. In all five economies, professionals need a licence to offer broking and agency services. In China, India, New Zealand and the United Kingdom, licences are also required by professional actuaries. However, most countries have no law or regulation establishing a process for recognising qualifications gained abroad in these professions, the only exceptions being India and New Zealand with respect to professional actuaries. Moreover, in India, appointed actuaries must be resident and members of the Actuarial Society of India.

This review shows that trade in financial services is still relatively restrictive. A local commercial presence is often required in order to offer services. Fully owned foreign subsidiaries are not always allowed. Regulation of prices and burdensome approval procedures still operate in some developing countries. Several countries have no established process for recognising foreign qualifications as insurance brokers or actuaries.

Digitalisation of the financial services sector offers tremendous opportunities for Australian banks and insurance companies, provided it is supported by adequate broadband connectivity. Many services businesses rely on access to high-speed internet, not least services exporters.¹⁴ On the one hand, digitalisation allows exporting firms to move away from physical distribution through foreign branches to online distribution, which can substantially facilitate foreign market entry. However, it requires that regulatory barriers

with respect to cross-border trade in financial services, such as requirements to establish a commercial presence in order to offer deposit-taking, lending, or insurance services, are abolished. On the other hand, even though financial services are already among the most digitised sectors in Australia, digitalisation still has enormous cost-saving potential. It is estimated that retail banking will be able to save between 20% and 33% of the operating cost base, while savings on risk costs are likely to be between 10% and 30%. Savings in personal lines insurance can be between 12% and 25% of operating costs and between 2% and 8% of claims costs due to fraud reduction and telematics (McKinsey, 2017).

Professional services

As discussed in chapter 2, the professional services included in the OECD STRI indices are legal, accounting and auditing, architecture and engineering services. All are delivered abroad through various supply modes: an architect sending a project via email trades architectural services across the border (Mode 1), a lawyer representing a foreign client in a national court exports a legal service via consumption abroad by the foreign client (Mode 2), an engineer flying to a foreign construction site to advise on a project exports engineering services via movement of natural persons (Mode 4). The provision of professional services can also be delivered *in situ* by opening a foreign branch or subsidiary of a national firm in a foreign market (Mode 3).

All professional services are subject to economy-wide limitations on the movement of natural persons wanting to provide services on a temporary basis. Almost all countries considered in this sample limit in some way market access to foreign professionals, either through quotas (United States and United Kingdom, except for intra-corporate transferees), or by limiting the duration of stay to less than three years (India and New Zealand, for certain categories of services suppliers), and all of them through labour market tests. The sector-specific restrictions found for each professional service covered by the STRI are described below.

Legal services

Barriers to the *commercial presence* of Australian law firms' affiliates in Australia's main trading partners come in different forms. Although foreign equity limits are rarely used for legal services, most countries restrict the ownership of law firms to locally-qualified lawyers, particularly in the area of domestic law. This occurs in China, New Zealand and the United States, where the shareholders of law firms practicing domestic law must all hold local licenses and/or practising certificates. The situation in India is more extreme: foreign law firms wanting to practice either type of law (domestic or foreign/international) are simply not permitted to establish in the country. In fact, following the *Advocates Act 1961*, legal practice is reserved for locally licensed Indian advocates, who are the only lawyers that can form and own law firms.

Corporations are not permitted in China and India, and lawyers may not enter into partnerships or otherwise associate with other professionals or foreign lawyers. An exception in China is the Shanghai Free Trade Zone (SFTZ), where a provision in the China-Australia Free Trade Agreement (ChAFTA) allows Australian law firms to establish commercial associations with Chinese law firms in order to offer Australian, Chinese and international legal services. Legal practices involving local lawyers and other professionals are also banned in New Zealand. Moreover, most countries prohibit foreign firms from hiring locally licensed lawyers. For instance, in China, India and New Zealand, local

lawyers cannot be employed by foreign firms to practice in areas of law reserved for domestic law firms.

Ownership restrictions are often coupled with other conditions requiring the majority of the board (or equity partners in the case of partnerships) and the manager of law firms to be locally licensed. This applies in China, India, New Zealand and the United States. China and India impose additional nationality and residency requirements on board members and managers. Finally, some countries require a commercial presence to be able to provide legal services, thereby inhibiting *cross-border trade*. For example, US law calls for non-resident attorneys to have a representative office in the state of New York in order to provide legal services. Equally, a licensed body must at all times hold a practicing address in England and Wales.

In some countries, the *movement of natural persons* is significantly affected by licensing and related issues, including nationality and residency requirements to practice, as well as lack of recognition of foreign qualifications. For instance, in China and India citizenship is essential to obtain a license to practice domestic law. In India, qualifications held abroad may be recognised to practice international or foreign law, but only if obtained from a country that mutually recognises Indian legal studies degrees.¹⁵ However, New Zealand, the United States and the United Kingdom have clear rules on the recognition of qualifications obtained abroad. In the case of the United States, only those qualifications from countries whose jurisprudence is based on the principles of English Common Law are recognised. Moreover, local examinations might be required to be able to practice locally. For instance, foreign lawyers wanting to practice domestic law in the state of New York need to sit the bar exam.¹⁶ In the United Kingdom, international lawyers must pass the Qualified Lawyers Transfer Scheme assessments. In New Zealand, Australian lawyers benefit from mutual recognition under the Australia New Zealand Closer Economic Relations Trade Agreement (see below for more on mutual recognition agreements).

Licensing requirements and limiting activities to licensed professionals largely define market access for foreign suppliers. In China and India, where only nationals can obtain a license (needed to practice and to hold shares in law firms), market access for Australian lawyers is very limited. Business can only be done through fly-in-fly-out visits to provide legal advice to clients (and in areas of the law that are not reserved to domestically licensed professional). This is also possible in the United Kingdom, where qualified foreign lawyers having to appear in court to represent their client on a specific case may apply for a ‘temporary call’.

International and commercial arbitration has been growing rapidly in recent years, for several reasons.^{17,18} A major advantage is that arbitration awards are enforceable in more than 150 economies, parties to the New York Arbitration Convention.¹⁹ Data on arbitration cases in Australia are not available, since most arbitration cases are organised on an ad-hoc basis by the participating parties. That said, large law firms in Australia are very active in the arbitration field. Business consultations reveal that arbitration is seen as a chance to grow into the export business, since arbitration procedures are not subject to national licensing requirements. Purely Australian law firms and multinational law firms established in Australia have to use different strategies in order to promote their services in this field. While multinational law firms based can have business referred to through their network of offices abroad, purely Australian law firms often work with foreign firms through informal arrangements, involving mutual referral of clients.

While Australian law firms seem to receive their fair share of the arbitration business, Australia has failed to establish itself as a major centre for international arbitration. The

Asia-Pacific region, with its high growth rates, is attracting a larger share of international arbitration cases than ever before, mostly due to the strong position of Singapore and Hong Kong. Singapore offers very liberal conditions for international arbitration cases: for example, parties in arbitration proceedings can freely choose counsel regardless of nationality, there is no restriction on foreign law firms engaging in and advising on arbitration, and non-residents do not require work permits to carry out arbitration services.²⁰

Other countries have managed to establish themselves as arbitration centres with the help of innovative rules. For example, in Stockholm, judges from the commercial court system are allowed to sit as arbitrators, facilitating synergies between the court system and the arbitration systems, and the best use of talent. By contrast, regulation in Australia often restricts the ability of law firms to engage internationally: firms report that they can be forced to travel to Singapore for meetings with foreign clients, because a visa requirement makes meetings in Australia more cumbersome (in the case of clients for whom the Visitor visa (subclass 600) is the only visa option). Additional costs like these can deter foreign clients, who may opt instead for representation by a law firm in Singapore.

Accounting and auditing services

Australia faces similar restrictions to those observed for legal services when it comes to *commercial presence abroad*. There are no foreign equity limits for Australian firms or Australian accountants/auditors in the economies under analysis, except in India, which does not allow any foreign investment in accounting and auditing services. Yet most countries restrict firm ownership to locally qualified professionals, and particularly so in auditing services. New Zealand and the United Kingdom require the majority of voting rights of an auditing company to be held by locally certified and registered professionals. There are also restrictions on the legal form permitted for firms in these sectors in China, India and New Zealand, where corporations are not allowed. In addition, India prohibits commercial associations with professionals other than locally licensed accountants.

Foreign ownership can also be limited by requiring that the majority or at least one of the members of the board of directors and/or managers be locally licensed. This is the case for auditing companies in all economies considered, except in the United States. In addition, in China and New Zealand, a representative office is required for Australian auditors to be able to provide auditing services across the borders (Mode 1).

Several conditions attached to licenses and qualifications limit the temporary *movement of natural persons* offering accounting and auditing services. While most countries have set up transparent procedures for recognising foreign professional education, training and experience in this field, some only recognise foreign qualifications on the basis of reciprocity, i.e. from countries with which they have signed Mutual Recognition Agreements (MRAs) or similar arrangements among professional bodies (e.g. Memorandum of Understanding, MoU, or Memorandum of Cooperation, MoC). In addition, some countries impose nationality or residency requirements to obtain a license to practice.

In China, for instance, only Certified Public Accountants (CPA) can provide accounting and auditing services, a title that is obtained by passing a national examination. Foreigners may be considered eligible for a CPA exam only when their qualifications are recognised on a reciprocity basis.²¹ In India, only Chartered Accountants that are members of the Institute of Chartered Accountants of India (ICAI), and hold a certificate of practice, can provide accounting and auditing services.²² Only foreign professionals whose qualifications

are recognised by the ICAI, and that have been residing in India for almost six months prior to the application, may apply for a certificate to practice in India.²³ In New Zealand, accountancy is not a regulated profession. However, individuals who conduct auditing according to the *Financial Markets Conduct Act 2013* must hold a licence under the *Auditor Regulation Act 2011*. Both Chartered Accountants Australia and New Zealand (CAANZ) and Certified Public Accountants Australia (CPAA), are accredited bodies that issue licences for their members. Members of other foreign professional bodies can directly apply for a licence to the Financial Markets Authority. Australian qualifications will be recognised under the Trans-Tasman Mutual Recognition Arrangement (TTMRA). Foreign auditors from non-recognised bodies need to undergo a revalidation process, local examination and need to exhibit proof of local practice.

In the United States, a Certified Public Accountant (CPA) license is required to provide accounting and auditing services. There is an established procedure to assess and revalidate foreign qualifications, although a local examination and local practice of at least a year are key requirements to obtain the license. Accounting is not a regulated profession in the United Kingdom, and there are no licensing requirements. However, direct registration with the HMRC is required in order to act on behalf of a client. Those who use the description "Chartered Accountant" must be members of recognised professional bodies, such as the Institute of Chartered Accountants in England & Wales (ICAEW). Recognised equivalent bodies in other Commonwealth countries, including Australia, allow Australian Chartered Accountants to practice in the United Kingdom. Auditing, however, is subject to licensing requirements in the United Kingdom. Only chartered accountants holding a practicing certificate may become "Statutory (or Registered) Auditors", and so be authorised to carry out the audit of annual accounts or consolidated accounts. Foreign qualifications can be recognised but a local practical test on UK tax and UK law is mandatory, as well as proof of required experience. Australian Chartered Accountants have to undergo a less cumbersome process compared to accountants from countries whose professional bodies are not recognised in the United Kingdom.²⁴

Architecture services

Architectural services provision is a regulated profession in all the economies in this benchmarking exercise, although it is less strictly regulated than the other professional services described above. Barriers to *commercial presence abroad*, through limitations on foreign equity, do not exist in any of the economies considered except in India, where only locally qualified architects can hold equity in a firm. Moreover, Indian citizenship is required to practice as an architect and all directors of architecture firms have to be locally licenced and Indian nationals. This requirement virtually closes the Indian architecture market to temporary *movement of natural persons*, except for entry of foreign architects via a temporary licensing system. In most countries, services trade via Mode 4 is less restricted. All have adequate laws or regulations that establish a process for recognising qualifications gained abroad. However, the revalidation process needs a local examination and at least one year of local practice in the United States and the United Kingdom.

Engineering services

Engineering services is not a regulated profession in India and in the United Kingdom, although all other economies require a license to practice. Nonetheless, very few barriers to *commercial presence abroad* are found in engineering services, neither foreign equity caps nor thresholds on equity holding by non-licensed individuals. Only China has a requirement that the chief engineer (manager) must be locally licenced, according to the Classification

Standard of the Qualification of Engineering Design. In addition, China imposes conditions on fee setting for engineering services, whereby fees for projects above CNY 10 million must be calculated based on the official Fee Standards of Engineering Design.

Limitations to the temporary *movement of natural persons* in engineering services exist as conditions attached to licensing requirements. China, New Zealand, the United States and the United Kingdom require a licence in order to provide engineering services. In the United States, acquiring a local licence requires permanent residency and domicile in the country, according to the New York Education Law. Moreover, China, New Zealand and the United States require a local examination. A temporary licensing system to allow foreign engineers to offer services exists in China and the United States; no such arrangement is necessary in India or in the United Kingdom, where the profession is largely self-regulated.

Mutual Recognition Agreements (MRAs)

As seen above, most of the obstacles to the free movement of professional services providers come from lack of revalidation of foreign qualifications, encompassing education, training and/or experience, and lack of recognition of foreign licenses or registrations. The objective of MRAs is to reduce barriers to the international mobility of professional services providers by addressing the lack of recognition related to accreditations or licensing and registration requirements.

Accreditation requirements are usually set by professional bodies for practicing professionals and might include completing an accredited higher education degree from a recognised education provider and/or obtaining qualifying professional experience, whereas *licensing or registration requirements* are imposed by regulatory bodies to address asymmetric information between consumers and suppliers and thus ensure quality control and consumer protection. The license is not considered a restriction in itself; it is, however, the lack of recognition of foreign licenses or registrations that limits the mobility of foreign professionals. Acquiring local licenses or registrations in addition to those already held in the country of origin duplicates effort and cost.

MRAs that cover recognition of foreign qualifications or accreditation are typically negotiated between the professional bodies of two or more countries, by reciprocally recognising accredited education institutions meeting quality standards set in both countries. Other MRAs aim to address recognition of licensing requirements and are generally negotiated by regulatory authorities. However, these MRAs are only partial and need to be followed up by professional bodies for their effective implementation.²⁵

The most comprehensive MRA adopted by the Australian Federal Government was the TTMRA with New Zealand signed in 1997. TTMRA covers nearly all accreditation, licensing and registration requirements for all regulated professions in the two countries. Together with the TTMRA, ANZCERTA developed a trade environment with characteristics of a single market between the two economies, featuring policy, law and regulatory regime cooperation. It is still the most wide-reaching international agreement signed by Australia.

The TTMRA has also allowed for greater professional mobility by considering occupations as equivalent based on the recognition of each economy's education qualification framework. Typically, lawyers trained in one country are never allowed to practice the law of a foreign country, the only type of law they can practice being either foreign or international law. The TTMRA, however, allows for lawyers admitted to practice

New Zealand law equal chances to practice Australian domestic law after being duly registered with the relevant court.²⁶ Section 14 of the *Trans-Tasman Mutual Recognition Act 1997* allows for the bilateral movement of registered lawyers so that they will not need to obtain any additional qualification to be admitted to practice in the other country, apart from registration with the relevant court. This makes the TTMRA more comprehensive than any other MRA or other forms of agreement in the sector.

On a multilateral scale, Australia has signed multiple MRAs on professional services. In the case of *engineering*, Engineer Australia (EA), the professional body representing and accrediting engineers, has signed several international agreements under the International Engineering Alliance, covering 26 countries. The first such agreement is the Washington Accord (1989), which enables equivalence and mutual recognition of undergraduate engineering accreditation of qualifications in 18 economies.²⁷ The Accord has limitations and does not directly address licensing of Professional Engineers or the registration of Chartered Engineers, although it covers recognition of the academic requirements that are part of the licensing processes in member countries. In addition to the Washington Accord, and subsequent ones (Sydney and Dublin) establishing equivalence for other branches of engineering, Australia is part of two other multilateral agreements, the APEC Engineer Register and the International Professional Engineers Agreement, aiming to accredit professional competences in the field of engineering. Nevertheless, these agreements do not solve lack of recognition of registration/licensing requirements.

EA has signed several bilateral MRAs with the corresponding professional bodies of various other countries, including Canada, Hong-Kong China, Ireland, Malaysia, New Zealand, Singapore, Korea, the United Kingdom and United States. Members of the engineering professional bodies that have signed these agreements have automatic membership rights in the other professional body part of the agreement.

As for *accounting*, Australia's three most important professional bodies (Certified Practising Accountants, CPA; Chartered Accountants Australia and New Zealand, CAANZ; and the Institute of Public Accountants, IPA), have been active in negotiating MRAs with several counterparts in Europe, North America and Asia. Agreements are in place (including with Canada, China, Hong-Kong China, India, Malaysia, Singapore, the United Kingdom and United States) to facilitate accreditation, but they do not grant the right to practice locally, which might be subject to other forms of licensing or registration requirements.²⁸

In *architecture*, as in some other professional services, Australian States and Territories regulate the profession within their own jurisdiction; however, professional qualifications and competences are assessed by the Architecture Accreditation Council of Australia (AACA). An MRA has been negotiated with the industry associations of Australia, Canada and New Zealand, streamlining cross-border registration for senior architects with at least seven years of experience. This means employers in the member states are offered the guarantee that a foreign architect from another member state meets the competence and knowledge requirements being vetted by their domestic associations to ensure the right level of education and skills. Similarly, registration requirements have been simplified in Australia, New Zealand and the United States, where citizenship or residency requirements have been waived for foreign architects from member states that intend to register in another member state.

The recently established Mutual Recognition Unit (MRU) within DFAT could assist in reducing the barriers faced by professional services providers. The unit's remit is to increase the value of Australian services exports by getting the most beneficial outcomes

for Australian firms during negotiations of mutual recognition agreements with the corresponding industry bodies in foreign economies. The unit provides direct assistance to Australian professional associations to help address international recognition of Australian qualifications and licencing and other barriers facing professional services companies.

MRAs are important for foreign professionals but also for the host economy, as facilitating accreditations and recognition of foreign licenses speeds up recruitment of qualified and trusted professionals who may be crucial for companies needing to act at short notice. Consultations with professional services providers from architecture, engineering and legal services revealed that these businesses engage predominantly with countries that have similar regulatory frameworks and business climates. Hence, the value of coordinated efforts by professional associations to align national standards and ensure harmonisation of patchy regulatory environments increases professional mobility and business opportunities. Finally, in a harmonised world with full mutual recognition of qualifications, there are far greater incentives for student mobility. It is in Australia's interest to negotiate deep and substantive MRAs, not just to give Australian professionals greater flexibility and broader working possibilities overseas, but also to ensure broader recognition of the qualifications it accredits and thereby boost Australian education services exports.

Concluding remarks

This chapter describes the regulatory regimes governing financial services and professional services in some of Australia's main trading partners. It highlights the challenges faced by Australian services providers in each of these economies. Emerging markets such as China and India are somewhat more restrictive, but the regulatory environments of developed economies, such as the United States and the United Kingdom, also pose some difficulties to Australian exporters.

In financial services, the reduction of foreign equity limits and promotion of cross-border trade in financial services should be a main priority for the Australian government. Continued efforts in the negotiation of Regional Integration Agreements would enhance the opportunities for financial services firms. In professional services, where possible, the recognition of foreign qualifications but even more so of foreign licensing and registration requirements, achieved through Mutual Recognition Agreements is of crucial importance for the international provision of such services by Australian professionals. Full accreditation of professional qualifications would also ensure greater student mobility, and hence, support education services exports.

Notes

1. Differences in business culture, difficulties with payments and protection of intellectual property rights were also important hurdles for Australian exporters (ECA, 2015). Recent findings show how the lack of clear information on market compliance and risks, external support, and on local customs and border procedures, as well as on the general regulatory environment of a foreign market, militate against Australian businesses entering and thriving in overseas markets (ECA, 2016).
2. Under the Extended Balance of Payment Services (EBOPS 2010) classification, the item *Other business services* includes R&D services, professional, management and consulting services, and other technical, trade-related and other business services. In EBOPS the item *Financial services* refers only to financial intermediary and auxiliary services between residents and non-

residents, but does not include *Insurance services*, counted as a separate item. The statistics reported above do not include the category *Insurance services*, but for the purpose of this assessment, the use of the term *Financial services* hereafter should be interpreted to include both services categories to match the OECD STRI definition of Financial services.

3. Source: ABS, *Australian Outward Foreign Affiliates Trade, 2002-03*, catalogue no. 5495.0.
4. A more focused and recent study by the Law Council of Australia found that Australia's provision of legal services from law firms established abroad was valued at AUD 141 million in 2010-11, which is a small fraction (around 18%) of Australia's total exports of legal services, even smaller than the one estimated for all professional services by the ABS survey in 2002-03.
5. Source: ABS, *Australian Outward Finance and Insurance Foreign Affiliate Trade, 2009-10*, catalogue no. 5485.0.
6. The Trade in Services Protocol was added to the Australia – New Zealand Closer Economic Relations Trade Agreement (ANZCERTA) in January 1989. In addition, Australia has FTAs in force with ASEAN and New Zealand (AANZFTA), Chile, China, Japan, Korea, Malaysia, Singapore, Thailand and the United States. FTAs concluded, but not yet in force, include with Peru, the Pacific Agreement on Closer Economic Relations Plus (PACER Plus) and the Trans-Pacific Partnership (TPP). Many of Australia's FTAs include commitments to review the chapters on services (e.g. a review of the China-Australia FTA chapter on trade in services commenced in 2017). Australia is also negotiating a number of FTAs including with Indonesia, the Pacific Alliance and parties involved in the Regional Comprehensive Economic Partnership (RCEP).
7. Exports of *financial services* and *other business services* to India were AUD 51 million and AUD 33 million in 2016. Negotiations for the India-Australia Comprehensive Economic Cooperation Agreement (IA-CECA) began in 2011, with the last round held in September 2015. Recently, there has been renewed interest in intensifying economic ties between the two countries. In April 2017, the Australian Government commissioned an independent India Economic Strategy to chart a course for this economic partnership.
8. Other free trade agreements liberalising cross-border trade in financial services for Australian providers include JAEPA with Japan, liberalising wholesale securities transactions, investment advice and portfolio management and KAFTA with Korea, liberalising investment advice and portfolio management services for investment funds, as well as a range of insurance and insurance-related services on a cross-border basis.
9. In November 2017, China announced plans to raise the foreign equity threshold to 51% by 2020 after three years and remove the cap on foreign equity after five years.
10. China's multilateral policy is even more restrictive, currently only allowing joint ventures with a maximum of 25% foreign equity while investment for each single foreign financial firm is limited to 20%. In November 2017, it was announced that these limitations should be dropped, without a timeline for this reform.
11. This requirement can be particularly detrimental to foreign-owned banks with a customer base consisting mostly of multinational companies and foreign nationals.
12. Some commercial banks may be regulated by state laws. In the state of New York (representative state for the STRI database), the *New York Banking Law* requires half the directors to be US citizens. The *New York Insurance Law* stipulates that a majority of directors in insurance companies be citizens and residents of the United States. Requirements on board members may be different in other states.

13. International standards are an important facilitator of trade in financial services and may help to prevent accounting irregularities and to make an economy more resilient to economic turmoil. In turn, deviations from these standards can be used in order to protect domestic firms from foreign competition.
14. Mobile banking is pervasive in many countries; machine learning has been transforming professional services in particular law with digital tools such as eDiscover which assists lawyers in searching for evidence, as well as routine tasks in accounting and other professional services (CEDA, 2017).
15. Australia is not one of those: Indian lawyers have to complete further courses on substantive law subjects, pass the bar exam and get a registered licence to practice in Australia.
16. Other states might be more liberal. For example, promotion of mutual recognition by the Australia United States Free Trade Agreement (AUSFTA) has led to new practicing rights for Australian lawyers in Delaware.
17. In Australia, international arbitration is governed by the *International Arbitration Act 1974*. Domestic commercial arbitration is governed by Uniform Commercial Arbitration legislation implemented by each Australian State and territory in 1984.
18. The numbers of arbitration cases in eleven of the most important international arbitration centres have risen from 4130 cases in 2012 to 5661 cases in 2016. See Table C.10 in Annex C for details.
19. Convention on the Recognition and Enforcement of Foreign Arbitral Awards (New York, 1958). See www.uncitral.org/uncitral/en/uncitral_texts/arbitration/NYConvention_status.html for a list of contracting economies.
20. <http://siac.org.sg/2014-11-03-13-33-43/why-siac/arbitration-in-singapore>; accessed on 6 October 2017.
21. Australia has signed a MoC with the Chinese Institute of Certified Public Accountants to ensure that Certified Public Accountants (CPAs) from Australia have their qualifications recognised in China.
22. The term ‘Chartered Accountant’ is an internationally recognised professional designation (in some countries equivalent to ‘Certified Public Accountant’), and indicates registered accountants that work in all fields of business and finance, including audit, taxation, financial and general management. Some are engaged in public practice work; others work in the private sector or are employed by government bodies.
23. Only members of the CPA Australia are eligible for the ICAI ensuring that their qualifications are recognised in India. Nevertheless, CPAA members would still need to apply for a certificate of practice requiring prior residency in the country. The other Australian accounting bodies have not signed MRAs with the ICAI.
24. For instance, Chartered Accountant members of the CA ANZ can gain reciprocal membership with the ICAEW, and through the ASIC, demonstrate they have met the practice and experience requirements necessary to obtain the license. Nonetheless, they will still need to prove their understanding of the UK principles of taxation and law by undergoing a local examination.
25. While FTAs do not provide direct recognition of qualifications and licensing, Australia’s FTAs encourage professional bodies to explore the possibility of negotiating MRAs and can give rise to frameworks under which MRAs could operate. For example, the Singapore-Australia FTA resulted in a signed MRA on accounting in 2014 and the Korea-Australia FTA was the basis for an MRA on engineering in 2015.

26. For Australian lawyers this involves being admitted and registered with the Law Society of New Zealand (for NZD 170) to receive a practicing certificate. Similarly, lawyers qualified in New Zealand can be admitted to the Australian legal profession. The process varies from state to state. Once admitted in Australia, they must comply with ongoing regulatory requirements. In the state of Victoria and New South Wales they must maintain an Australian practicing certificate as required by the *Legal Profession Uniform Law*.
27. The eight original signatories were Australia, Canada, Hong Kong, China, Ireland, New Zealand, South Africa, United Kingdom and United States. There are currently 18 signatories and six provisional signatories who have appropriate processes and systems in place but are not yet functional.
28. For instance, the MRA between the American Institute of Certified Public Accountants and the National Association of States Boards of Accountants (which includes Australia), allow for a fast-track examination of professional qualifications to be work in the United States as certified public accountant, but the agreement does not exempt foreign accountants from obtaining local licenses where required.

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Chapter 5. Insights into strategic sectors: Health, METS, ICT, education and tourism

Chapter 5 extends the analysis of Australian services exports. This chapter focuses on five key sectors that contribute significantly to Australia's services exports (education and tourism), have linkages to Australia's traditional comparative advantage (METS), are important to modern economies and have a high tradability (ICT) or have potentially rising levels of tradability in the future (health). Individual sections in this chapter are in the form of case studies, providing data on the economic importance of the respective sector as well as key information on regulatory regimes in Australia and abroad.

Australia's exports of health services

The Australia New Zealand Standard Industrial Classification (ANZSIC) contains a Division Q on Health Care and Social Assistance. Within this division, the health segment can be further differentiated into Subdivision 84 on Hospitals and Subdivision 85 which covers Medical services (including General Practice and Specialist Medical Services), Pathology and Diagnostic Imaging Services, Allied Health Services (comprised of Dental Services, Optometry, Physiotherapy, and Chiropractic and Osteopathic Services) and Other Health Care Services (e.g. Ambulance services and other health care services not elsewhere classified).

From a trade perspective, these services can be distinguished by modes of supply. Important activities include exports of health care services via Mode 3 through outbound investment activity. Depending on the type of service and regulatory requirements in the host country, Australian firms will either set up specialist service providers abroad or they will partner up with local firms in order to provide health services.

Foreign direct investment in health services accounts for a relatively small share of total Australian outward FDI stocks. In 2016, Australian investors held direct investment in the health sector worth AUD 6.3 billion, corresponding to 1.1% of total Australian outward FDI stocks of that year, even though value added in health and social work accounts for roughly 7% of Australia's GDP. However, there is anecdotal evidence from various firms that successfully operate affiliates abroad.

The hospital business is usually heavily regulated. However, market access barriers have recently been reduced for operating hospitals in the People's Republic of China (hereafter "China"). Through the China-Australia Free Trade Agreement (ChAFTA), Australian services providers are now allowed to establish fully owned private hospitals in seven Chinese provinces.¹ Even though this segment is liberalised on paper, no Australian health services companies have so far managed to successfully establish and operate private hospitals in China.

Weak enforcement of national laws by provincial governments is among the most important barriers to entry in China mentioned by health businesses. Contacts with provincial and municipal government representatives are crucial to smooth business operations. Hence, even though fully owned subsidiaries are now possible, local partners are still essential to overcome difficulties on the ground. Furthermore, businesses reported fears about a loss of reputation in an environment where the legal system is not sufficiently strong and mediation of complaints is unregulated. Instead, people often use public media and orchestrated protests to enforce redress in cases of malpractice. In addition, there is a general fear that red tape might be added after entry in an attempt to thwart the operation of successful foreign hospital to the benefit of local providers.

However, some important steps have been taken to facilitate entry of foreign hospital operators into China. For example, a regulation that used to restrict doctors from practising in more than one hospital has recently been removed. The abolition of this policy brings benefits from economies of scale in the operation of commercial hospitals, where the mobility of highly qualified professionals leads to knowledge spillovers across different hospitals belonging to a single corporate group.

In other segments of health services, such as pathology, many Asian countries are characterised by less restrictive regulations than comparable activities in Australia. In Singapore, Malaysia and Viet Nam, pathology services can be advertised directly to

consumers, creating business opportunities in societies with a growing and ageing middle class that is increasingly able to afford modern health care services. For example, expenditure on health care services measured at constant prices doubled between 2006 and 2014 in Viet Nam and between 2005 and 2014 in Malaysia (WHO Global Health Expenditure database). This provides an opportunity for Australian services providers to enter a market via the acquisition of foreign providers and achieve substantial growth through increased operational efficiency.

A second Mode of health services trade is the treatment of non-residents within Australia (Mode 2). In many cases, this type of health export results from the treatment of non-residents who did not come to Australia specifically for treatment, such as tourists, business visitors or foreign students. Medical tourism, where people visit a certain country for the purpose of receiving medical treatment in that country, is not yet frequent in Australia. In 2010, only 12 000 visitors came to Australia for medical reasons, accounting for 0.23% of all visitors in that year (TRA, 2011, quoted from Deloitte, 2011).²

At first sight, this number seems very small. Data for other countries can set it in context: Hanefeld et al. (2013) report 52 000 patients travelling to the United Kingdom for medical care in 2010, whereas Johnson and Garman (2010) estimate the number of foreign patients visiting the United States annually for medical treatment at between 42 400 and 102 900. Consequently, the Australian figures suggest a market that is still relatively small, and this despite anecdotal evidence of an increase in medical tourism in many developed countries. However, data on the size of the sector are not harmonised across countries and cannot be used for international comparison for a larger number of countries.³ Crucial determinants of the patterns of health-related travel are, first and foremost, the cost and quality of the treatment. While these two factors are usually considered jointly, more travellers in developed economies seem to seek low cost for a sufficient level of quality while only a minority seek maximum treatment quality irrespective of the price. An increasing number of people are travelling for medical treatment from developed countries to developing and transition economies in South East Asia, Latin America and Eastern Europe since the appearance of facilities targeting foreign consumers with offers of high-quality health services in these countries. Other important factors are geographic proximity and cultural affinity. For specific health problems, ethical regulation prohibiting certain treatments can be another crucial determinant for the patterns of cross-border health travellers.

Table 5.1 shows that prices for different types of surgery are comparable in developed economies. A notable exception is the United States with significantly higher prices for all treatments. The table also shows that in Singapore, Thailand and India many operations can be offered at more competitive prices than in Australia. In addition, there are many more competitors than those listed in the table, such as the United Arab Emirates, China, Malaysia, Sri Lanka, Mexico, Costa Rica or Hungary. All these countries have realised the potential of a growing market for health care services and are located closer to other major economies, suggesting that competition for Australia will remain difficult in the future.

A strong area of Australian comparative advantage is related to research and development (R&D) in the health and biotech sectors. For example, clinical trials in Australia benefit from a robust regulatory environment with strong intellectual property protection and legal standards. This is particularly true for early trial stages, for which fewer participants are required. By contrast, later trials with thousands of participants are more often conducted in countries like China or the United States. Moreover, most companies in the segment benefit from the R&D Tax Incentive, helping them to remain competitive in the face of increasing competition from Asian countries such as Singapore, Korea, and Chinese Taipei.⁴

Table 5.1. Selected surgery costs by country 2008 (USD thousands)

	Australia	New Zealand	United States	United Kingdom	Korea	Singapore	Thailand	India
Heart bypass	23.1	30.5	130.0	24.6	34.2	16.5	11.0	9.3
Heart valve replacement	n/a	30.5	160.0	n/a	n/a	12.5	10.0	9.0
Angioplasty	n/a	8.5	57.0	14.9	n/a	13.0	13.0	11.0
Hip replacement	16.5	15.0	43.0	14.0	11.4	9.2	12.0	7.1
Knee replacement	13.9	14.0	40.0	16.6	24.1	11.0	10.0	8.5
Hysterectomy	4.9	6.0	20.0	n/a	12.7	6.0	4.5	6.0
Spinal fusion	n/a	n/a	62.0	n/a	n/a	9.0	7.0	5.5

Note: All values in USD converted at 2008 exchange rates.

Source: Voigt et al. (2010), Deloitte (2010), Tattara (2010), quoted from Deloitte (2011).

International trained medical graduates (IMGs) must obtain registration at the Medical Board of Australia (MBA) or the relevant specialist medical college in order to practise in Australia. A recent report (Deloitte, 2017) found that specialist colleges mostly comply with the Good Practice Guidelines in the quality assessment process. Assessments and additional requirements for Specialist IMGs are mostly consistent across colleges. Nevertheless, the authors note that some colleges may not be applying a standard assessment and that at some colleges there was a lack of information about additional registration requirements. There are different registration types, which are available for IMGs to practise for periods of supervision or for teaching and training purposes. Even though a number of pathways exist, hospital operators mentioned that they face obstacles when trying to bring in foreign specialist doctors for short-term visits.

Given the lack of a clear competitive edge and its remote geographical location, Australia could try to identify a profitable niche within its areas of comparative advantage. For example, a coordinated strategy for tourism and health services could help to promote a combination of medical treatment and holidays in Australia, increasing the average spending and duration of stay for foreign tourists. Businesses mentioned the difficulty of promoting medical services offered by general hospitals, compared to those of specialised medical centres. Offering a wider diversity of medical institutions, including small and specialised clinics, may help to promote Australia as a high-quality location for specific treatments.

Mining equipment, technology and services (METS)

Mining represents about 57% of Australia's exports and 8% of GDP, and rents from its mineral extraction are estimated at 5% of its GDP (ICMM, 2016). The Mining Contribution Index (MCI) ranks Australia 11th out of 183 countries in terms of the contribution of mining to its economy.⁵ The only other OECD country with a similar profile for mining is Chile (24th in the MCI in 2016). All other OECD countries produce and export a wider variety of goods, and mineral rents represent a smaller percentage of their GDP.

Not only is the mining sector the largest indirect exporter of services, but also most of these services are sourced domestically. Currently, only about 5% of services inputs into mining are imported, expressed in terms of value added of final demand, for different types of mining outputs. The stability over time of the ratio of imported to domestically sourced services input in

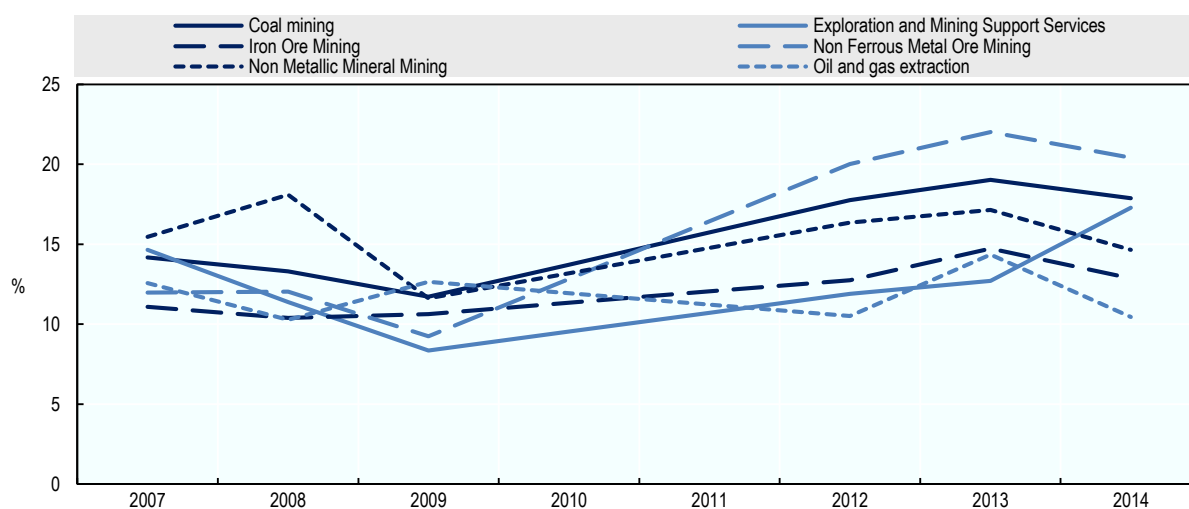
The impact of the economic crisis on the mining sector is seen to have been stronger when inputs of goods are also considered. Imported inputs (goods and services) accounted for 9-22% of total inputs, depending on the segment of the mining sector. The share of imported inputs fell sharply with the onset of the crisis, suggesting that trade in inputs into the mining sector was less resilient to random shocks than trade in services (Figure 5.1).⁶

A breakdown of the substantial share of the services value added embedded in mining exports shows that exploration and mining supportive services are the largest input into mining exports, other than the mining sector itself, accounting for 7% of the value added embodied in mining exports (Table 5.2). These services represent the first stage of the mining value chain and so understandably account for an important portion of value-added in mining exports. Professional and technical services is the second most important input at 6%, followed by finance and insurance (4%), construction (4%), and wholesale and retail (3%).

In fact, the seven most important inputs into the mining sector, after those from the sector itself, are services. They include both specialised services to the mining sector (e.g. exploration and mining support services, specialised engineering and technical services) and non-specialised services (e.g. financial services, construction, wholesale and retail trade, real estate and other supporting services). The breakdown in a dynamic context suggests that, among the various mining services industries, growth areas during periods of increasing services demand are mostly professional, scientific and administrative services. These include both specialised mining services like mining engineering and non-specialised services such as accounting and legal services. Financial services and wholesale and retail services also increase strongly when mining firms increase spending on services.

Figure 5.1. Share of imported inputs in domestic production

Selected mining segments



Note: ABS I-O data for 2010 and 2011 are missing hence ratios for these two years are interpolated.

Source: Own calculations on ABS, Australian National Accounts: Input-Output Tables, selected years, catalogue no. 5209.0.55.001.

Table 5.2. Sectoral decomposition of value added in mining exports

Value added (in %)	
Sector	2014
Mining and quarrying	54.8
Exploration and mining support services	6.9
Professional, scientific and technical services	5.6
Finance and insurance	4.4
Construction	3.5
Wholesale and retail trade	2.9
Building cleaning, pest control, administrative and other support services	1.7
Non-residential property operators and real estate services	1.5

Source: Own calculations on ABS, Australian National Accounts: Input-Output Tables, selected years, catalogue no. 5209.0.55.001.

Providers of non-specialised services to the mining sector were able to increase their activity outside mining when commodity prices plummeted in 2014. Conversely, after the economic and financial crisis hit in 2008-09, and mining was less affected than many other sectors, some services firms diversified into mining. For example, some engineering and construction firms switched from non-residential commercial building into mining-related work, and some legal, accounting and financial firms moved resources into servicing the mining industry. This means that mining support services are less likely to move in a cyclical pattern with other services, and that mining support services may be more resilient to the inevitable downturns in the highly cyclical mining sector activity. In fact, the data confirm that demand for mining services is on average quite resilient to downturns – the negative growth rates during downturns are substantially smaller than the positive ones during boom years. It also suggests that certain services inputs into mining are increasing over time in the aggregate in Australia.

International growth and domestic competition

The mining sector is the largest indirect exporter of services, and most of those services are sourced domestically. Nonetheless, there is no specific classification of mining services that is internationally comparable. Services to the mining sector include sector-specific services like some engineering and geological services, digital mining, drilling, and exploration, and others that are non-specific to the sector like construction, transport and logistics, catering, machinery and equipment repairs. METS firms also export their goods and services directly, but this is a small fraction of their domestic consumption (about 1% in 2014). Therefore, the potential for export is substantial.

Australian METS firms (Box 5.1) have named three areas where the biggest opportunities exist: diversification (“expanding into new market segments and industries”, mentioned by 55% of all firms), trade (“international growth and export expansion”, 42%) and innovation (“development of new technologies and products”, 37%) (Austmine, 2015). Ensuring that METS firms are able and encouraged to export and expand to new markets is therefore highly relevant to their growth potential.

Australia has engaged in active economic diplomacy, signing preferential trade agreements with ASEAN, Chile, China, Japan, Malaysia, New Zealand, Singapore, Korea, Thailand and the United States (Box 4.1). Many of these economies are important markets for METS firms. For example, in the ChAFTA (2015) China allows Australian services suppliers to provide technical consulting and field services in coal bed methane and shale gas

extraction. Consistent with its most liberal FTAs to date, China also guarantees access for Australian suppliers to provide a range of services related to exploiting oil and gas, iron, copper and manganese resources in cooperation with Chinese partners. Australian suppliers may also provide mineral resources exploitation services in the central and western regions of China. Under ChAFTA, market access is guaranteed to Australian companies established in the Shanghai Free Trade Zone that are undertaking joint construction projects with Chinese counterparts in Shanghai. These companies are exempt from business scope restrictions, allowing them to undertake a wider range of commercially meaningful projects.⁷

The most recent addition to the set of Australian FTAs, the Australia-Peru FTA (PAFTA), signed on 12 February 2018, has not yet entered into force. Its focus is on mining services, with guaranteed access on non-discriminatory terms for Australian suppliers of mining-related consultancy, research and development, engineering, environmental, mining and technical testing and analysis services. PAFTA also improves access for Australian suppliers to government procurement in Peru and foreign direct investment is liberalised by raising investment protection and introducing streamlined processes.

There is already a significant Australian investment presence in Peru, and in particular in Peru's mining sector, with over ninety Australian businesses currently located there, up from ten in 2003. Australia has also become an associate member of the Pacific Alliance of Chile, Peru, Colombia and Mexico, all of which have important extractive sectors.⁸

In 2015, METS firms reported that their most important challenge in starting or expanding an export business was “lack of internal resources, including international marketing capabilities” (Austmine, 2015). Among the main reasons were “inability to find suitable partners/distributors”, “difficulty accessing supply chains”, “lack of information on local culture, business practice, language of potential export market” and “limited export procedures knowledge”. This is not surprising as many mining services firms are small and SMEs do not always export easily. Further assistance helping mining services firms navigate foreign environments, facilitating contacts, and helping to promote their services, are all within the mandate of export promotion agencies. Austrade provides this function in Australia, with an annual budget of AUD 424 million in 2016-17 for an average staff of 1 036 in ten Australian regions and 29 foreign offices.⁹ See chapter 6 for an overview of Austrade's initiatives in export promotion and those of some of its competitors.

The growth of the METS sector, including its international expansion, requires a highly skilled work force. However, many firms in Australia experience finding and keeping professional and skilled employees as a major challenge. An actively outward-looking approach may help to address the scarcity of such professionals. METS firms may need to partner with foreign engineering and professional schools in countries where they operate. Partnering of research facilities abroad, such as CSIRO Chile, could help to ensure Australian METS firms access the best global talent.¹⁰

Within Australia, METS firms have developed a strong knowledge base about their clients and form relationships that are close to their comparative advantage: 80% of firms work directly with mining companies, 65% saying that their *relationship with customers* is their “key competitive advantage” and for 81%, *working closely with customers* is how competitive advantage is maintained (Austmine, 2013).

Box 5.1. Characterisation of METS firms

Austmine, the Australian agency for mining equipment, technology and services (METS), undertook two in-depth surveys of the METS sector, covering 860 firms (2013) and 432 firms (2015) providing “specialised support and solutions to global miners” and having “a specialist knowledge and core competency in the mining and minerals industry”. The sector comprises between 1 200 and 1 500 companies in Australia; the large sample size indicates a fairly comprehensive picture.

Manufacturers dominate the METS sector and represent 38% of its firms and 41% of the sector’s gross revenue. Engineering, procurement and construction management firms (EPCM) are 15.2% in number, and represent 22% in value, respectively. Contract mining firms are very large, accounting for 18% of sector revenue, but only 6.4% of companies. Conversely, firms providing consulting, information technology, technology developers and other professional services (CITP) are much greater in number (27%) than they are in overall revenue (8%). Around three-quarters of these firms have less than 100 employees. In total, gross revenue of specialised mining services firms represent around 41% of the METS sector or AUD 37 billion in 2012. Contract mining is not considered a specialised mining service in this study, as it represents outsourcing of the mining activity itself.

Australian METS firms have a diversified customer base: while close to 25% of firms work exclusively in the mining sector, 39% of METS firms obtain less than half their revenue from the mining sector. In general, smaller firms in the CITP sector were the least diversified. Australian-owned firms represent 84% of all firms in the sector, with foreign-owned firms tending to be larger. By order of frequency, foreign-owned firms are from United States, United Kingdom, Germany, France, Switzerland, Japan, South Africa, Sweden, Canada, China and New Zealand. The median age of a METS firm is 20 years. Australian-owned METS firms tend to be younger than their foreign counterparts.

Most METS firms export, especially those that rely on innovation and technologies. These firms are also smaller and younger so are genuinely “born global”. Top export destinations include New Zealand, Indonesia and Papua New Guinea. A high percentage of firms also export to the United States, Chile, Malaysia, Canada and Thailand. In 2014, 52% of exporters had offices or operations offshore, signalling a committed approach to growing their international business.

Table 5.3. Share of METS firms that export, by activity

Business activity	Share of firms that export
EPCM / Engineering / Construction	50.4%
Consulting	66.3%
Contract mining	23.6%
IT developer or equipment provider	71.7%
Technology development/application	81.8%
Other professional services	38.0%

Source: Austmine (2013, 2015).

Documentary evidence and consensus opinion in the sector suggest that these relationships have developed organically. However, there are also domestic policies that encourage national value chains in mining. For example, the *Australian Jobs Act 2013* requires public and private major projects in Australia, with a capital expenditure of AUD 500 million or more, to prepare and implement a plan according to the Australian Industry Participation National Framework (AIP).¹¹ The Act requires firms to have a broad understanding of the capacity and ability of Australian entities to supply goods and services and to conduct

awareness campaigns about key procurement opportunities for Australian suppliers. Australian firms must regularly report on the value of procurement done locally and in the country. There is, however, no requirement to procure any share of goods and services in country.

Some agreements at sub-national level grant explicit preferences to Australian suppliers. For example, the 2001 *McArthur River Project Agreement-Ratification Act* specifies that preference should be given to local professional services, labour and materials by the mining firm extracting materials and by all its sub-contractors (Northern Territory of Australia, 2007). This must be seen in the light of Australia's commitments to the GATS regarding national treatment. Australia has bound Mode 3 (commercial presence) for services incidental to mining in relation to consultancy on a fee or contract basis relating to mining and oil field development, except for preferences given to indigenous or Aboriginal people (GATS, 1994).¹² However, Australia is not the only country to apply such policies (for an overview, see OECD, 2017b).

Mining is Australia's largest indirect exporter of services, exporting mostly exploration and mining support services, specialised engineering and technical services, but also financial services, construction, wholesale and retail trade, real estate and other supporting services. In comparison with the mining sector itself, one important characteristic of these services is a lower degree of cyclicality, creating employment that is relatively stable and resilient.

Compared to services embodied in mining exports, direct exports of mining services are of relatively low importance for the Australian economy, indicating a huge potential for future growth. Australia has engaged in active economic diplomacy, signing preferential trade agreements with various countries in order to facilitate such direct exports in the METS sector. While market access is an important first step, further assistance is vital, helping METS firms navigate foreign environments, facilitating contacts, and helping to promote their services.

Innovation

Many mining firms have difficulty-accessing funding. In other sectors where innovation is key to survival and competitiveness, such as IT or biotechnology, venture capital firms provide financing for start-ups and small, young firms. Given the specialised nature of mining innovation, non-specialised venture capital firms like those investing in the information technology space are unlikely to invest in mining services. There are few private equity funds specialising in mining innovations. Jolimont Global and Aurus are two such funds with a METS focus.

Some innovation is financed through large firms in the supply chain. Heavy machinery and mining equipment producers like Caterpillar and Komatsu have their own financing departments offering various funding options, including for developing innovation. Some finance firms have dedicated corporate financing divisions for mining; examples are Resource Capital Funds (RCF), a private equity fund focused on mining in over 51 countries, and GE Capital and Balboa Capital. In 2016, the Canadian company Red Cloud Klondike launched the first regulated online equity crowdfunding platform for the mining sector.

Due to the cyclical nature of the mining industry, innovation in mining services is prone to a misallocation of capital, leading to funding shortages when prices for natural resources are low. Chapter 6 analyses different government programs in Australia and other countries related to the promotion of R&D, including the Innovation and Science Agenda (NISA), as

well as funding for start-ups and other small companies, and evaluates their performance in a comparative perspective with similar programs in other major economies.

Energy consumption by the mining sector is an area that might benefit from R&D spillovers and innovation from other sectors. Such spillovers can be very relevant due to the large share of energy costs in the sector's total expenditure. Energy-related innovation may not only help to reduce the cost of energy consumption, but also to reduce emissions of greenhouse gases and air pollution. In recent years, Chile has attempted to transform its mining sector into a frontrunner in the renewable energy segment. Information on Chile's strategy and its lessons for Australia are summarised in Box 5.2.

Box 5.2. Renewable energy for mining services

Energy is a major input into the mining sector. Energy generation requires the procurement of many ancillary services necessary to support the reliable transmission of electric power from seller to purchaser. Energy consumption is generally between 15% and 40% of the operating budget of a mine (Ernst and Young, 2016). The mining sector uses more energy than all Australian residential uses combined, and five times more than the agriculture sector. Renewable energy has an insignificant share in the Australian mining sector's energy mix, even though the price of renewable energy has fallen substantially and has become a strongly viable choice, particularly in remote, sunny areas.

By contrast, other countries have been more active in promoting solar energy generation in mining-intensive areas. For example, in Chile a roadmap with targets of renewable energy aims for at least 20% of energy used for mining coming from renewable sources by 2020. Various initiatives and policies have been put in place to this end, making it likely that the objective will be achieved earlier than expected. *Law 20257* of 2008 established a quota for the generation of renewable energy. This quota is gradually increasing. From 5% in 2010, the quota will reach 10% by 2024. Energy producing companies can buy their required quotas from other companies or invest in infrastructure to generate it themselves. Chile enacted a carbon tax (*Law 20571*) in 2014 imposing a levy of USD 5 on each metric ton of carbon dioxide emitted by fixed sources with a generation capacity of at least 50 MW, except biomass.

Since 2005, Chile has required distribution companies to run tender processes for securing energy supply to those with an energy demand of up to two MWs. In 2015 the tender process was amended (*Law 20805*) by introducing different sized hourly blocks of energy supply (spanning day, peak times, night and also 24 hour options). This led to a much greater participation in tenders from the renewables sector, which was no longer restricted to offer energy continuously. Supply periods were also lengthened to 20 years attracting long-term investment. Moreover, the Chilean energy sector allows producers to sell freely the electricity they produce back to the grid through power purchase agreements (PPA).

Law 19940 of 2004 opened up the spot market and guaranteed connection to the country's power grids for small renewable generating plants. The reform exempted projects using renewables from paying all or lower transmission fees and encouraged SMEs (the lowest tier including plants generating up to 9 MW). A bill of 2016 pushed the cost of transmission tolls onto the final client, further reducing entrance barriers for SMEs, encouraging transparency and avoiding congestion.

Australia has made strong commitments on combatting climate change in various international agreements including the Paris Agreement (ratified by Australia on 9 November 2016 and entering into force on 9 December 2016). Promoting the use of renewable energy, particularly solar power, in mining and mining services, can make a substantial contribution to achieving Australia's targeted reduction of CO₂ emissions by 26-28% (on 2005 levels) by 2030.

In summary, mining is Australia's largest indirect exporter of services, exporting mostly exploration and mining support services, specialised engineering and technical services, but

also financial services, construction, wholesale and retail trade, real estate and other supporting services. In comparison with the mining sector itself, one important characteristic of these services is a lower degree of cyclicity, creating employment that is relatively stable and resilient.

Compared to services embodied in mining exports, direct exports of mining services are of relatively low importance for the Australian economy, indicating a huge potential for future growth. Australia has engaged in active economic diplomacy, signing preferential trade agreements with various countries in order to facilitate such direct exports in the METS sector. While market access is an important first step, further assistance is vital, helping METS firms navigate foreign environments, facilitating contacts, and helping to promote their services.

ICT and digital trade in services

Information and Communications Technology (ICT) is important throughout the Australian economy. Developments from the ICT sphere are of wide applicability and may overturn business models in other sectors, offering enormous potential for profitable ventures using technologies like artificial intelligence, machine learning, block chain and distributed ledgers, or sensor technology. The sector is labour-intensive, offering high-paid jobs, and compared to other sectors, it relies less on geographic proximity to its customers. Hence, a thriving ICT sector must be a priority for a healthy, modern economy.

More than other industries, this sector benefits from foreign talent. Australian businesses have made extensive use of the 457 visa in order to bring the most talented workers into the country. Occupations like developer/programmer, ICT business analyst, software engineer and ICT project manager are consistently among the occupations with the most 457 visa grants, jointly accounting for more than 12% of the total number of 457 visas granted (DIBP, 2017). Therefore, a liberal visa regime for this sector is important in times when ICT skills are not sufficiently available domestically.

Consultations with businesses from the ICT sector revealed a group of successful firms in this field that do not feel restricted by horizontal barriers to services trade mentioned by firms in other sectors. Whether in the area of app development, business intelligence or digital transformation, these firms find it easy to offer their services to clients worldwide through cross-border trade in digital services and occasional business visits to their most important markets.

The relative ease with which Australian ICT business participate in digital trade also results from Australia's progressive inclusion of digital trade aspects in its most recent FTAs. For example, under the Peru-Australia FTA (PAFTA), Australia and Peru guarantee the free flow of data across borders and are committed not to impose any localisation requirements on data. Requirements on the transfer of technology or other proprietary information, like source codes, as well as customs duties on electronically transmitted content are ruled out by this agreement. In order to facilitate consumer access to digital services, the agreement establishes rules that allow smaller firms to compete with dominant providers in the telecommunications sector, using technologies like co-location, interconnection or resale of services.

Nevertheless, some ICT businesses expect more support from the Australian Government than they currently receive. Larger ICT businesses mentioned the importance of long-term public procurement contracts for attracting multinational enterprises to establish a commercial presence in Australia. In those MNEs, subsidiaries from different countries

often compete against each other in order to attract new business functions to the country. Inward foreign direct investment of this type may help to create a significant number of well-paid jobs in the Australian economy. While public procurement contracts should, in general, be given to the bidder offering the best terms, including second-tier considerations like job creation in public procurement contracts can help to make commercial establishment a viable option for international businesses and secure more inward FDI. On a different front, several ICT interviewees mentioned the existence of national award programs for successful businesses. The main motive for such programs is not monetary reward but the resulting national and international attention and the associated gain in reputation. These programs do exist in Australia, yet businesses feel that their profile is too low and that the awards do not promote innovative Australian businesses adequately. Moreover, businesses mentioned that the selection criteria for export awards are often targeted towards manufacturing firms and do not reflect the reality of services businesses, for which concepts like productivity are much more difficult to measure. Consequently, services businesses feel excluded from these award schemes and suggest a revision of the selection criteria to facilitate an equal treatment of firms in different sectors of the economy.

Challenges and opportunities for Australian education services exports

As already seen in chapter 3, education contributes largely to Australia's exports.¹³ This section concentrates on the main barriers and opportunities for Australia's exports of educational services. A particular emphasis is put on the Asia-Pacific region, where Australia could make good use of its proximity and trade linkages to fast-growing Asian markets. Australia could further diversify its trading partners to ensure a more sustainable long-term export growth for the education sector by tapping into the great opportunities emerging from ASEAN economies. In fact, the ASEAN population, of which over 65% is under 35, has a strong appetite for education and skills development (McKinsey, 2014). Australia could leverage on its long-standing expertise in providing high quality international education and take advantage of ASEAN strong commitment to human resources development.

However, it is worth keeping in mind that the nature of education supply and demand is changing. Traditionally, students from non-English-speaking countries looking for a study experience abroad would select English-speaking countries. China, Malaysia and India are now beginning to challenge this trend and are working to become major education destinations providing high-quality education services domestically to their own students as well as foreign ones, by offering price-competitive courses in English.

The significance of Australian education services exports

Australia's on-shore education exports (e.g. education services provided to international students enrolled in Australian educational institutions) were valued at about AUD 22 billion in 2016.¹⁴ Education services accounted for 31% of total services exports in 2016, up from barely 12% in 2000.¹⁵ International education supports more than 130 000 jobs (Deloitte, 2015a) and is Australia's third largest export and the most important services export sector. In 2016, there were nearly 400 000 international students enrolled in higher education courses, 8% up from 2015.¹⁶ Export growth has been remarkable over the past two decades, helped by Australia's proximity to fast growing markets in Asia-Pacific region. In particular, students from China and India accounted for nearly 40% of Australia's total enrolments in 2016.¹⁷ Australian off-shore provision of education services

(i.e. revenues from Australian campuses abroad or from online courses) was worth AUD 434 million in 2014. However, the value of off-shore education provision is small compared to that of on-shore exports, valued in 2014 at AUD 17 billion (DFAT, 2017). Yet, in that same year, off-shore campuses, most of which are based in Asian countries, enrolled about one-quarter of all international students studying at Australian education institutes (PC, 2015b).¹⁸

Vocational education training (VET) by Australian education providers is also an important component of Australian education services exports. In 2016, VET cross-border exports (e.g. training offered on-shore to international students and professionals) was 17% of total education services exports, the second highest component after higher and tertiary education (69%). While the value of off-shore provision of VET is not available, data published by the Department of Education and Training (DET) shows that in 2016 there were over 39 000 enrolments overseas, with the vast majority offered by Technical And Further Education (TAFE) institutes and largely delivered in China (nearly 70%), Kuwait (6%), the United Arab Emirates, Fiji and Mauritius (around 3% each).¹⁹

Australia is a popular destination for international students. The United Nations Educational, Scientific and Cultural Organization (UNESCO) ranked Australia the third most popular destination of international students in 2015, after the United States and the United Kingdom, attracting 6% of the global total of internationally mobile students.²⁰ A 2016 survey of more than 65,000 international students studying in Australia by the DET shows that the key factors that influenced higher education student's choice to study in Australia included the reputation of Australian qualification (95%), of the education system in Australia (94%), of the higher education provider (92%), and a generally safe and secure setting (93%). Over 89% of respondents were satisfied with their overall experience of studying in Australia.²¹

Australia's international education sector is supported by a well-established regulatory environment. Australia has two quality assurance frameworks for the provision of higher education and Vocational Education and Training (VET): the *Higher Education Standards Framework (Threshold Standards) 2011* and the *National Vocational Education and Training Regulator Act 2011*. The Tertiary Education Quality and Standards Agency (TEQSA) is Australia's independent national quality assurance and regulatory agency for higher education. In addition, the Australian Skills Quality Authority (ASQA) is the national regulator for Australia's vocational education and training sector. ASQA regulates courses and training providers to ensure nationally approved quality standards are met within the VET Sector. Furthermore, the international education sector in Australia is underpinned by strong consumer protection measures for international students, through the *Education Services for Overseas Students (ESOS) Act* (discussed in more details below), which sets out the legislative requirements and standards for the quality assurance, and Tuition Protection Service (TPS).²² Consumer protection, qualification frameworks and national quality assurance standards are essential to establish and maintain Australia's valuable reputation for high-quality education.

Providing education services to international students or training students and professionals on-shore (Mode 2), and teaching international students in campuses located abroad or offering English language/skill training courses to students and businesses overseas (Mode 3), are just two ways Australian institutions export their educational services. Australia exports educational services also through distance learning (Mode 1), or through the temporary visits by Australian academics or teachers to foreign education institutions (Mode 4).²³ Barriers in the destination country can affect all these modes. However, some

characteristics of the Australian domestic regulation may affect Australian education services exports. These might equally influence on-shore provision of educational services to international students.

Outside Australia, trade negotiations have gradually reduced barriers to market access and national treatment (Box 5.3). Education services in the region are slowly becoming more liberalised following specific commitments found in the World Trade Organisation's (WTO) General Agreement on Trade in Services (GATS) and those negotiated in Free Trade Agreements (FTAs). Nevertheless, negotiating commitments around higher education so far remains rather limited, and despite these efforts, residual limitations are still present at home and abroad.

Box 5.3. Trade negotiations in higher education services

Education is still one of the least committed sectors under the GATS. Only 62 WTO Members have made commitments in one or more education sub-sectors, and only 53 (including Australia) for higher education services. Asia-Pacific economies with commitments in higher education services include Cambodia, Chinese Taipei, Japan, Lao People's Democratic Republic, China, and Viet Nam.

On a bilateral level, Australia has concluded FTAs including services provisions with several Asian economies. Some of these agreements aim to facilitate on-shore and off-shore provision of education services among its parties. For example, under ChAFTA, there is a focus on the mutual abilities of education institutions from the two economies to market themselves, improve their public profile and provide recruitment opportunities in both economies and to facilitate mobility through recognition of prior qualifications. Australia and China also have a MoU on education co-operation, including information exchange briefings on VET policy reform and joint research on occupational standards in priority areas. Similarly, JAEPA (2015) aims to improve recognition of qualifications issued in both economies, strengthening student mobility and guaranteeing equal access to education providers. JAEPA's recognition of qualifications has contributed to Japan formally recognising Australian bachelor degrees for entry into postgraduate programmes in Japanese institutions, making Australia's education services more attractive in Japan.

MAFTA (2013) is another FTA with positive list commitments on higher education services provision. It has enabled the commercial establishment of privately funded higher education institutions, including university campuses in each respective country, with up to 70% Australian ownership for establishments in Malaysia (100% after 2015). Malaysia has raised the quota on Australian lecturers teaching in Malay universities from 20% to 30%. SAFTA (2011) also covers higher education services, with provisions focused on mutual recognition of previously obtained degrees with course accreditation and professional experience. Majority ownership of higher education institutions is possible under TAFTA. Through the ASEAN-Australia-New Zealand Free Trade Agreement, Laos committed to allow wholly owned foreign subsidiaries in higher education. Moreover, in 2011, Australia and Viet Nam signed a MoU on cooperation in VET, including mobility of personal data and materials, quality assurance, qualification recognition, accreditation and access for foreign institutions (DET, 2013).

Sources: WTO Integrated Trade Intelligence Portal (I-TIP), DFAT, and Austrade.

Australia's domestic regulation

Elements of national regulation that might affect the demand for educational services by international students are:

- **Australia's student visa framework**

Inefficient visa processes are a key barrier to potential international students. Acknowledging this, in mid-2016, the Australian Government implemented a new

Simplified Student Visa Framework (SSVF), aiming to minimise the cost of regulatory and administrative compliance associated with student visa applications and handling.²⁴ The SSVF is definitively an improvement on the previous rather complex student visa framework, which encompassed eight visa subclasses, an Assessment Level framework and Streamlined Visa Processing (SVP) arrangements. The two most significant changes under this new framework are a reduction in the number of visa subclasses from eight to two, and the introduction of a single immigration risk framework, under which all international students are assessed, regardless of the programme of study.²⁵ The SSVF risk rating system assigns to each country and Commonwealth Register of Institutions and Courses for Overseas Students (CRICOS) registered education provider a risk level from 1 (low risk) to 3 (high risk, subject to more rigorous checks). Risk ratings are reviewed periodically by the DoHA and are not made public, to reduce targeting of specific education providers by non-genuine students. It is too early to say whether the SSVF will be able to address some of the negative effects generated by the SVP framework, including market distortions for education providers and ‘course-hopping’ practices introduced by limiting the number of education providers eligible for streamlined visa arrangements (Box 5.4).²⁶

Box 5.4. Education providers’ perceptions on the Simplified Student Visa Framework

The preparation of this report involved a public consultation with businesses of different sizes and from several services sectors. The consultation was facilitated by the Australian Department of Foreign Affairs and Trade and the Australian Services Roundtable. In a first phase, semi-structured interviews gathered businesses’ perceptions on sector-specific matters. In the second phase, the same businesses filled out a questionnaire on a wide range of subjects aimed at assessing obstacles to trade in foreign markets and at home, and the effectiveness of government initiatives. Ten education providers were interviewed, including senior managers, deputy vice chancellors and executive deans from several Australian universities, TAFEs, English language providers and other private Registered Training Organisations (RTOs), across five Australian states. These providers were asked to describe their direct experiences with the new immigration risk rating system. Although DoHA data suggest that the majority of applications lodged outside Australia are processed on average in 20 calendar days and that the grant rate continues to be relatively high under the SSVF, the educational providers interviewed expressed some reservations about the new risk rating system.

Given the demonstrated importance of education exports in the context of Australia’s services trade performance, the results of these consultations highlight the importance of diligent policy attention in the following areas:

- The role of service providers in immigration risk management.
- The relationship between visa processing times and the start of courses, scholarships and business relationships with foreign education providers (or other arrangements with foreign governments).
- The provision of feedback on visa rejections.

Information requirements related to the travel history of the student visa applicants (and their families) and online payments.

- **Student benefits and financial assistance**

The Australian Government provides financial support for local students but seldom for international students. Financial support can come in the form of loans.²⁷ Government grants and privately funded scholarships also help to assist foreign students.²⁸ Nevertheless, the inability to access financial support for education is a barrier for prospective international students. Similarly, not being able to access other student benefits might influence international students' decision to study overseas. Reduced fare transport concessions are an example of such benefits. International students of higher degree in Australia might only be able to access concession-priced public transport in certain states and territories.²⁹

- **Online education**

International students holding a student visa and enrolled with an Australian education provider may not complete more than one quarter of their total course by distance and/or online learning. Understandably, this quantitative limitation to e-learning comes from the need to manage the risk of non-compliance with visa requirements should international students opt to work instead of attending classes on campus. However, limiting e-learning might harm both the education provider (incurring higher costs) and the 'genuine' student, who might choose a more technology-savvy foreign education institute. Austrade has stressed the importance for Australia's competitiveness to cater for learner and employer demands for borderless learning 24/7 in its *Australian International Education 2025 market development roadmap* (Austrade, 2016). This roadmap recognises the changing demands of students and their increasing preference for a more flexible and "borderless" delivery of education services (including online and through transnational education experiences). Recognising these demand shifts, the e-learning cap will be raised from 25% to one-third of the student's course from 1 January 2018, following a review of the *ESOS framework* (PC, 2015a).³⁰

- **Access to post-study employment**

The reform of the Temporary Work (Skilled) visa program (subclass 457) (Box 2.2) might have some consequences for the ability of some international students to stay in Australia after graduation. In fact, under the TSS visa program (subclass 482), which abolishes and replaces subclass 457, applicants are required to have a minimum of two years' work experience relevant to a specific occupation. Only international students holding higher education degrees from Australian education providers and who, through the Temporary Graduate visa (subclass 485) Post-study work stream, have acquired the qualifying working experience, will be able to apply for the new TSS visa, provided the qualification is related to an occupation on the list of eligible skilled occupations.³¹ Students who do not hold a bachelor degree qualification may be impacted; however, there is the potential to recognise prior work experience by these students or experience from work experience undertaken on a part time basis while studying, as well as experience as part of an industry placement under their qualification. Box 5.5 presents an international comparison of post-study work visas.

Among the elements that might affect the supply side of education services are domestic regulatory requirements, and quality and accountability standards. These are there to safeguard students' interests and, in the specific case, to ensure that international students

get a high-quality learning experience that meets their needs. A brief overview of major regulatory requirements is reported below:³²

- The provision of higher education services to international students is governed by the *ESOS Act 2000*. Institutions and their courses must be registered on CRI|COS in order to enrol overseas students to study in Australia on a student visa. In addition, higher education providers can only accept international students after meeting quality standards required by the *National Code of Practice for Registration Authorities and Providers of Education and Training to Overseas Students 2018 (The National Code 2008)*. Besides these two requirements, education providers need to register on the CRICOS.³³
- Providers of *English Language Intensive Courses for Overseas Students (ELICOS)* must adhere to additional regulatory requirements and a set of national standards, the ELICOS standards 2018, which are sector-specific and cover standards for the provider, the course (its delivery and assessment), and for educational resources, the physical premises and standards of business management.³⁴

Additional requirements on tuition assurance as well as quality and accountability standards, as outlined in the *Higher Education Support Act 2003 (HESA)*, must be met in order for national students to be eligible for government support. These requirements concern financial viability, quality, fairness to students, arrangements for student contributions and tuition fees. Foreign e-learning providers must be registered with the Australian Government's *Tertiary Education Quality and Standards Agency (TEQSA)*.³⁵ Registration is not necessary for foreign providers that partner up with an established Australian university. Recent initiatives adopted by the Australian Government aim at enhancing the education system. These include revisions to the *National Code of Practice for Providers of Education and Training to Overseas Students 2018*, designed to provide stronger student protection, and the recent amendments to the *ESOS Act*, aimed at ensuring all registered education providers act with integrity. Nevertheless, education providers that intend to establish campuses or subsidiaries abroad, or that want to negotiate strategic partnerships with foreign education institutes, still face considerable regulatory differences between the Australian quality assurance schemes (TEQSA or ASQA) and the respective quality and accountability standards of the foreign country where they would like to do business.

Participants in the business consultations found adherence to local quality standards even more challenging in foreign countries that did not have a national strategy and rather relied on state or provincial frameworks. Further alignment and harmonisation of quality standards would facilitate investment in transnational education as well as increase business partnerships in foreign markets. This is a large task, particularly when the two countries start from very different quality frameworks. The Australian Government is working to harmonise standards bilaterally or in international fora (e.g. China-Australia MOU on qualification recognitions in higher education, or APEC education strategy, and to reach some form of economic cooperation with less developed and emerging countries.

Box 5.5. Comparison of Post-study Work visas in English-speaking countries

The option of staying on after graduation to undertake qualified work is one element that prospective students consider when choosing their study abroad destination. Therefore, offering effective post-study working opportunities is as essential as building a strong university brand with international recognition.

Australia's post-study working arrangements allow international students who have recently graduated from an Australian educational institution to apply for a Temporary Graduate visa and stay for a period of time ranging from 18 months to four years, depending on the level of qualification they obtain in Australia. The number of Temporary Graduate visas lodged with the DoHA continues to rise over time. In 2015-16 there were over 34 000 visas lodged (the majority of which in the Post-Study Work stream), up by 42% compared to the previous period. Like Australia, other English-speaking countries, such as the United States, the United Kingdom and Canada, have similar working arrangements.

United States: international students can stay for up to 60 days after their studies end. Those that graduate with F-1 status, and provided their studies lasted longer than nine months, can stay and work for a total of 12 months after graduation (Optional Practical Training, OPT). Students who graduate with a science, technology, engineering and math (STEM) degree can, since March 2016, apply for a 24-month extension of their OPT, giving them the possibility of three years working experience. Once OPT expires an H-1B visa (specialty occupation) will be required to continue working in the United States.

United Kingdom: the post-study work visa route was closed in line with changes to immigration policy in 2012. Typically, non-EU graduates have only four months after their studies end to look for a job. If in that time they secure a job at a particular skill level that pays at least GBP 20 800, then they can apply for a Tier 2 (General) visa. This process is, however, more complicated for non-EU graduates as jobs have to be first advertised to workers in European Economic Area (EEA) before being offered to non-EEA immigrants, unless these jobs are on the shortage occupation list. The closest to a post-study working visa still available in the United Kingdom is the Tier 4 Doctoral Extension Scheme, available for PhD students who want to stay for an additional year to work or look for a job. To push its competitive edge as an innovation centre, the United Kingdom allows graduates with a genuine and credible business idea to apply for a Tier 1 Graduate Entrepreneur visa, which allows graduates that meet a set of eligibility requirements and that want to set up and run a business in the country to stay for up to three years and four months, with the possibility of renewal.

Canada: Study Permits become invalid 90 days after graduation; however, foreign graduates can still apply for a Post-Graduation Work Permit Program (PGWPP) if they studied in Canada for at least eight months and for a maximum of three years. The duration of stay of the PGWPP is equal to the length of full-time studying program. Studying in Canada also helps international graduates to qualify for permanent residency through programs like Express Entry.

Australian education providers considered post-study work arrangements just as important as an effective student visa framework and the global ranking of Australian education institutions. In fact, foreign students who can complement their studies with a professional experience are not only able to offset part of their education costs, but are also, and more importantly, able to build their professional skills, gain new insights into new working environments and build lasting professional connections. These working ties are essential not just for those that remain in the country as they increase employability outcomes, and might even contribute to developing new businesses in Australia, but also for graduates that eventually return to their home country, as these could be good leverage points for subsequent business interactions with Australia. Hence, well designed post-study work visas not only promote strategies attracting prospective international students but also trade and future business opportunities by building people-to-people links.

Regulatory challenges abroad

Barriers exist within the Asia-Pacific region to Australian exports of education services via commercial presence abroad (off-shore provision), domestic consumption by overseas students (in terms of recognition of Australian qualifications in their country of origin) and temporary movement of Australian academic and teaching staff abroad. Some economies allow Australia to set up overseas campuses, establishing branches of Australian institutions overseas and developing further offshore education services (Deloitte, 2015a). Among those campuses that have been successful in their international expansion abroad are Wollongong University's campus in Dubai (where enrolments have risen by 41% in the last five years), James Cook University in Singapore, Monash University's campuses in Malaysia and South Africa, Curtin University in Malaysia, and RMIT University's two campuses in Viet Nam. In 2014, there were over 800 higher education programmes offered by Australian universities abroad (Universities Australia website). Thousands of formal agreements are signed every year between Australian universities and those in foreign markets (Box 5.6). In 2016, 9 171 agreements in place were (up from 7 133 in 2012), facilitating Australian universities entry into foreign markets.

Barriers to Australian providers abroad can include a high level of control by local authorities and the need to wade through numerous domestic administrative hurdles and local content requirements before they can establish a commercial presence, including a stand-alone campus. This is the case in Indonesia, where Australian providers must be in partnership with an approved Indonesian higher education institution. In China, foreign higher education institutions may only be established as a joint venture where the head of the institution is a Chinese citizen. Australian providers also face some limitations on the number of their joint venture campuses in China and on how many times the same course can be repeated across Chinese campuses.

The Philippines maintains a foreign equity cap of up to 40% of ownership for investors in educational institutions other than those established by religious groups and mission boards (SEC, 2015). The Commission on Higher Education (CHED), the independent government regulator of higher education services in the Philippines, has tight control over all colleges and universities in the country. The commission regulates the closure, programme offerings, building specifications and tuition fees that universities are required to charge. Only a few private universities and colleges are granted autonomy or deregulated status.

By contrast, Viet Nam allows 100% foreign-owned investments and campuses to open under the 2005 *Decree 73/2012ND-CP, Investment Law* (Australian Government, 2013). Foreign providers of education in Viet Nam may establish as fully foreign-owned institutions, joint ventures, business cooperation contracts or representative offices, all of which are considered Vietnamese legal entities. Under business cooperation contracts, foreign providers can partner with Vietnamese investors without creating a new entity.

Despite the degree of freedom that foreign investors enjoy in Viet Nam, there are still minimum capital investment requirements for prospective foreign institutions.³⁶ For example, a foreign-invested university must secure a minimum investment of VND 150 million (approximately AUD 7 500) per student. More broadly, there is also a ban on acquiring and renting land in Viet Nam.

Australia and Viet Nam renewed two MOU for Cooperation in Education and Training in March 2018, outlining cooperation across all levels of education, including school education, English language collaboration, higher education and training.

Viet Nam and the Philippines both have restrictions on curricula, inscribed in their AANZFTA schedule of services commitments. In the Philippines, the status of post-graduate business programmes is decided by a technical panel of experts. In Viet Nam, adult education and other education services including foreign language training content must be approved by Viet Nam's Ministry of Education and Training, and foreign firms are also subject to restrictions on advertising online. Australian education exporters may have more investment opportunities in China, as indicated in China's 13th Five-Year Plan for Economic and Social Development (2016-2020). The plan suggests that private capital participation in education will be eased and favourable policies launched, so that the range of educational services available to consumers can be diversified and extended (KPMG, 2016). Limitations to temporary movement of Australian academics and teachers

Box 5.6. Entry modes for Australian education providers

Australian education institutions can expand their presence overseas following different business models. Universities can establish a fully-fledged university abroad or open only a campus to offer specific courses to domestic and third-country students. Some of these foreign establishments act as 'feeder campuses' by offering pre-university course or English language training. Feeder campuses can also provide the initial part of a programme overseas and then channel students to Australia, either to complete the rest of the programme or to upgrade to a higher degree/qualification.

Other education providers choose to operate through partnership agreements. These can take the form of joint ventures or licensing agreements, and might not necessarily be driven by the regulatory conditions found on site. A partnership can be a very effective way of overcoming some implicit and hidden barriers. A local partner would not only offer the infrastructure and better access to resident workforce, but also its extensive knowledge of the local demand, compliance with domestic regulation and red-tape, accreditation requirements, marketing to and recruiting new students (both domestic and international), and so on. A strategic partnership can also be an entry point into third foreign markets. Some providers have indicated in the business consultation that partnerships allowed them to expand their presence abroad simply by following their partners into new foreign countries.

Partnerships can be another way of overcoming the competition faced in foreign markets. Foreign private providers might find it harder to enter markets where the domestic provider is heavily subsidised by the local government. Some businesses also indicated that subsidies could benefit foreign education providers when their respective governments back them. This can be the case for ELICOS providers in some Asian markets competing with English providers, which are strongly supported by their own foreign government agencies, such as the British Council.

Some VET providers, particularly those with a relatively large global footprint, make frequent use of licensing agreements, where the foreign teaching staff is trained in Australia and once a certain level of competence and skill is attained, return to the provider overseas and deliver qualifications that are fully recognised in Australia. The Australian education provider is responsible for the intellectual property of courses and curricula offered abroad. The Australian institution also conducts quality controls to ensure that Australian accreditation standards are met. However, finding the right partner is critical for this model. In that respect, some VET providers have expressed doubts on whether such licensing agreements are a sustainable and efficient business model in the long run. Other forms of collaboration, such as joint ventures, would allow closer monitoring of the inputs and performance of the local partner. Experience with partners in certain foreign markets suggests this might be a critical factor.

Viet Nam restricts the recruitment of foreign teachers: 60% of course modules must be delivered by permanent teachers, although twinning programmes allow foreign courses to be taught in Viet Nam. The Vietnamese Ministry of Education and Training (MOET) or Presidents of certain Vietnamese universities are responsible for their approval at all levels. Equivalency needs to be set for curricula, facilities, legal status, quality assurance and accreditation. For twinning programmes, foreign teachers must have at least five years of experience and their qualifications need to be recognised by the competent authority.³⁷ To work as teachers in China, foreigners need a Z (work) visa (which requires a bachelor's degree), the necessary professional skills, two years of work experience, two sets of medical exams, no criminal record and English as their first language. The visa must be obtained from the applicants' home country or Hong Kong, China. Teachers typically will also need a Foreign Experts Certificate (SAFEA) and an Invitation Letter from the institution they will be working for.³⁸

Government initiatives to boost the competitiveness of the sector

Australia's higher education market relies on attracting international students to study in Australia or at an Australian institution abroad. The DET has created a *National Strategy for International Education 2025* designed to increase the competitiveness of the Australian international education sector. This ten-year blueprint has three objectives: strengthening the sector's fundamentals by maintaining high quality education, training and research, fostering a positive student experience and ensuring effective quality assurance and regulation; enhancing partnerships with other universities, academics, institutions and governments, to build and maintain global and domestic connections, and promote mobility; and becoming globally competitive and responding flexibly to changing demands and opportunities.

Austrade has created the *Australian International Education 2025 market development* (AIE2025) roadmap to ensure that Australian institutions can be agile and responsive to the changing demands of the sector (Austrade, 2016a). The roadmap responds to possible market changes including borderless learning, technology utilisation and attracting capital flows from global sources (Box 5.7).

The Department of Foreign Affairs and Trade (DFAT) has set up the *Australian Global Alumni Engagement Strategy 2016-2020* to promote connection and engagement with the more than 2.5 million international students that have studied at Australian institutions. This strategy is planned to provide recent alumni with career and networking opportunities, and to inform them of special government-funded opportunities to undertake high-level research projects (DFAT, 2016).

Additionally, all states and territories have state-wide comprehensive plans for the education sector, except to some extent Western Australia (WA). Stakeholder consultations found that some Western Australian institutions felt disadvantaged because of this. RTOs also felt that WA could work toward attracting foreign students and professionals by taking advantage of its extensive knowledge and wealth of experience in the mining and energy sector, which could fuel demand for professional training in WA. Participants in the consultation called for greater collaboration among the largest universities in the state to sell the state brand better, but also pushed for an integrated state-wide strategy that would connect tourism and international education agendas.

Box 5.7. The digital transformation of higher education

The emergence of new technologies has been transforming traditional university models. Artificial Intelligence (AI), the Internet of Things (IoT), Augmented or Virtual Realities (AR/VR) are already been contributing to increasing efficiency and enhancing knowledge in various disciplines. Data-driven decision-making is widely used in universities in the form of search tools for scientific research, connecting learners to universities and matching students to career tutors. The surge in connected technology is replacing paper material with its digital version, enhancing information-sharing through cloud services, facilitating scheduling of courses, tracking capability developments, and providing the platform for e-learning. AR/VR are pushing research in science and medical fields and allowing students and vocational training professionals to engage directly with their subject matter via immersive and interactive experiences. Various alternative education models are already operating in the higher education sector: Modular Object Oriented Dynamic Learning Environments (MOODLEs) and Massive Open Online Course (MOOCs) provide open-source platforms for e-learning, while innovative methods are challenging conventional education models.

Navitas Ventures, part of the global education provider Navitas, collected the views of leaders from partner universities in Australia, the United States, Canada and the United Kingdom, students and recent graduates from all continents and founders of education start-ups in key markets, on how the digital transformation is changing higher education and what the challenges and possibilities might be. Most participants expected the traditional university model to be disrupted by the digital transformation within the next ten years. However, while universities focused more on administrative efficiency and lower operating costs through digitised learning content, students were more concerned with their immediate job prospects, calling for innovation to support their internships and pathways to employment.

Universities participating in this study also indicated the crucial role that digitising marketing and admission plays in driving enrolment growth, a view echoed by the Australian education providers interviewed during the stakeholder consultations. Some believed that online promotion via social media would offer a new alternative channel compared to education agents to directly reach out to international students. Others suggested that online models would increase transparency in international partnerships based on licensing agreements and enable the Australian provider to retain greater control on the education process, content and quality.

Thanks to the digital transformation of the education sector, distance learning allows a more inclusive delivery of education services, reaching out to more disadvantaged groups (in remote locations and poor communities). Distance learning might also help foster the skills underpinning knowledge-based economies and potentially bridge the education-employment divide. Nonetheless, distance learning, particularly when transnational, is still governed by a multi-layered framework of laws and regulations. Data localisation requirements, financial regulation restricting e-payments, broadband connection speed, complications with accessing and processing information, ownership of online course material, accreditation of qualifications obtained online, are some of the hurdles education institutions face when providing cross-border education services. Often laws and regulations are not aligned with recent technological developments. The pace of innovation and the establishment of new and alternative education models require a more flexible regulatory environment, with a coordinated answer from different regulatory bodies, which would enable hybrid education systems rather than maintain or create new barriers.

Source: Navitas Ventures (2017).

In summary, there are considerable opportunities for Australia to take advantage of its reputation, geographical location and proximity to Asia, and its extensive experience to establish itself as the world leader in education services exports. Nevertheless, the growth potential of the education sector may be compromised by some characteristics of the domestic regulation and limitations found in foreign markets. In particular, Australia's off-shore provision of education services still faces many obstacles in the form of restrictions to establishing wholly-owned Australian campuses abroad, non-accreditation of qualifications

delivered by Australian education providers overseas and limitations to the international mobility of Australian academics. Targeted promotion strategies by Australian State and Territory Governments would ensure greater visibility for Australian education institutions abroad and could boost the number of international students still higher. More concerted efforts are required, within the country and with foreign partners via FTAs, to address barriers at and behind the border that might inhibit education services exports.

The growth potential of the Australian tourism sector

Tourism is a vital part of the Australian economy. In the year to June 2017, Australia welcomed 8.5 million international visitors, up by 9% from previous year, who spent a record AUD 41 billion in the same year, 7% up from June 2016.³⁹ The strong growth in international tourism is moving Australia towards the lower bound of its *Tourism 2020* growth target for overnight visitor expenditure. Despite all the growth potential outlined in the national strategy for tourism, Australia still faces considerable challenges.

Promoting Australia's image overseas and marketing Australia as an international destination are critical for increasing the number of international visitors, particularly in a very competitive environment. Australia might benefit from recent geopolitical developments, including concerns around safety, increased levels of protectionism, and greater economic and political uncertainty, but cannot afford to be complacent. Much can still be done to increase the visibility of the country, secure major international events and entice international tourists to visit Australia. A coordinated response from the Commonwealth and individual states and territories, as well as from industry associations, is necessary to create interesting and effective marketing strategies to publicise Australia attractiveness as a great tourism destination.

Australia has made considerable progress in facilitating visa applications for certain nationalities, for instance implementing new and innovative tourist visa products, such as trials of lodgement in Simplified Chinese and a ten-year-validity Visitor Visa (subclass 600) for Chinese citizens to reduce red tape for frequent travellers. In addition, Australia has introduced a priority consideration service, whereby 'fast-tracked' Visitor Visa applications (including those lodged online) can be processed within 48 hours for an additional fee. Furthermore, as of July 2017, Chinese, Indian and United Arab Emirates nationals can lodge their application for the Visitor Visa online. Extending online lodgement to a wider range of nationalities is a significant enhancement in reducing part of the red tape involved in Visitor visa applications and might help to reduce processing time. Further embracing new technology and risk management settings would continue to ensure Australia maintains a sustainable growth of the tourism sector.

The national strategy *Tourism 2020* was introduced in 2011 with the objective of doubling overnight visitor expenditure by 2020. The plan identified the following key policy priorities: encourage high-quality tourism experiences, including Indigenous tourism; limit the tax, red-tape and other regulatory burdens the industry faces; undertake coordinated and effective marketing campaigns; and work with industry to support the development of tourism infrastructure that can drive demand. Tangible targets of the national strategy include increasing accommodation by 6 000 – 20 000 new rooms by 2020, capacity increases of 40-50% in international aviation and of 23-30% in domestic aviation, and an additional 152 000 persons employed by 2020 to meet demand.

The Australian National Audit Office (ANAO) recently published a review of the *Tourism 2020* strategy to assess its implementation so far by Austrade and Tourism Australia.

Monitoring and reporting of progress against the strategy targets, based on robust performance measures, concluded that there is sound evidence pointing to effective implementation. However, there is a gap in the assessment of the overall impact of the strategy in terms of net benefits to the Australian economy. Finally, the review also indicated that Australian Government funding allocated to the tourism sector is based on a transparent communication strategy, although there is still scope to improve on performance measurement at the operational level (ANAO, 2017).

The tourism industry and government have a major partnership role in promoting sustainable and more inclusive tourism growth. Achieving strong and sustained growth in international tourism depends on public confidence in Australia as a safe and secure tourism destination, and on well-managed and orderly visa programmes. The Government is embarking on a transformation of the existing visa system (Box 2.3), which will make it easier to understand and navigate, to the benefit not only international tourists but also international students and professional services providers making business visits to supply their services.

Tourists pay additional border charges, such as the Passenger Movement Charge (PMC) of AUD 60. This tax, included in the plane ticket price, is levied on all passengers departing Australia on international flights.⁴⁰ Australia has the third highest departure tax of all OECD members after the United Kingdom and Germany. The United Kingdom charges an Air Passenger Duty (APD) of GBP 75 (approximately AUD 127) on outbound flights in economy class, and GBP 150 (AUD 253) for all other classes. However, the APD offers lower rates of GBP 13 (AUD 22) for economy class and GBP 26 (AUD 45) for all other classes on flights of less than 2000 miles. The rate in Germany varies between EUR 7.47 (AUD 11.40) for European destinations and EUR 41.99 (AUD 64) for long-distance flights. As the PMC does not vary with distance, it is relatively more expensive than the tax levied in other countries for short-haul flights. For instance on the Trans-Tasman route, the International Air Transport Association (IATA) estimates it accounts for nearly 10% of an average return fare. The PMC was raised from AUD 55 to AUD 60 in 2016 and IATA estimated that the "reduction in aviation-related gross value-added (GVA), compared with a scenario where the passenger movement charge was abolished, could total AUD 375 million with 3800 fewer jobs supported" (IATA, 2016). The higher PMC not only affects international visitors but also Australian passengers, via higher fares, and Australian exporters by increasing transport costs and hence reducing competitiveness. Tourism and travel industry groups reacted to the 2016 increase by claiming that the tax might reduce demand from inbound passengers.

Industry associations are also calling for an expansion of air routes and agreements and the removal of aviation capacity restrictions. Aviation capacity is typically regulated by bilateral Air Service Agreements (ASAs), which set out the operation of scheduled international air services between two countries. Capacity, or access, entitlements, include the number of seats or flights that can be operated on established routes between the ASA partners. To date, the capacity of international airlines is restricted in Australian major gateway airports like Brisbane, Melbourne, Perth and Sydney, and secondary airports in Melbourne and Sydney, but is unrestricted for other regional Australian airports. Industry associations and major airports claim that the lack of capacity within certain ASAs effectively restricts access to the Australian market for some international airlines, limiting competition between foreign and domestic airlines on a number of routes, involving for instance main Australian gateway airports and Hong Kong, China or Malaysia. Lack of competition drives up airfares, dampening demand for tourism, travel, and trade in

general.⁴¹ Costs are affected by exchange rate fluctuations as well, which might contribute to influence the motivation to travel.

There is also an infrastructure shortfall. Private and public investment is needed to improve the breadth and quality of offering, for projects like new airports and road links. In 2016–17, aviation infrastructure projects were worth over AUD 10 billion. More than half the pipeline investment in aviation was accounted for by the Western Sydney Airport at Badgery's Creek, with the rest spread across other major aviation infrastructure projects including upgrading and expanding of existing airports.⁴² Increasing port capacity to accommodate more ships could also work to increase tourist demand. The estimated total output of the cruise industry in 2015–16 was AUD 2.9 billion, 10% up from the previous period.⁴³ In just over twelve years, the number of cruises has doubled, as has the passenger capacity of visiting ships (ACA, 2016). Industry associations suggested that infrastructure investment, including accommodation, attractions and telecommunications, could create a more diversified and widespread offer, reaching beyond the most visited cities, so as to ensure a more equitable and sustainable future growth of the sector.

There have already been various policy responses under the *Tourism 2020* plan, including the establishment of a network of investment specialists around the world to assist prospective foreign investors. These specialists should help identify high-potential projects, connect international investors with Australian counterparts, and assist them through the investment approval process.⁴⁴ Increasing investment in transport infrastructure like airports, roads, trains and cruise ship terminals, would address current growth constraints in the sector.

Availability of an adequately skilled workforce is another challenge to the growth potential of the tourism sector. A recent report suggests that skilled labour supply in the sector falls short by 38 000 positions based on 2014 ABS data, with rising vacancy rates (Deloitte, 2015b).⁴⁵ It also indicates that there has been a large increase in the number of businesses signalling skills deficiencies. In addition, productivity growth in the tourism sector is at below average to average relative to that of other industries, according to a recent report by the Committee for Economic Development of Australia (CEDA, 2017). Over the last fifteen years, labour productivity (output per hour worked) has increased in the retail trade, accommodation and food and transport sector, but has lagged behind elsewhere in the tourism sector. The sector's slow productivity growth could be explained by rapid wage growth, but also by the changing composition of tourism workforce. Jobs in the sector have become more seasonal, with increasing staff turnover rates, and higher shares of part-time workers, which are less likely to be involved in skills training programs. The report suggests that the Government could assist by improving the quality of training opportunities and the management of temporary workers. The provision of training would ensure a future supply of skilled workers to undertake tourism jobs that respond to the effects of digital disruption. A simplification of the visa arrangements around foreign skilled workers would also boost efforts addressing the skills shortage in the tourism sector. It would also be important to build the right management skills among tourism operators so they can tailor their services better to the rising demands of visitors from key tourism markets.

In summary, there is strong potential for increasing Australia's tourism market share, although some challenges still need to be addressed. From the perspective of a potential international tourist, the country's appeal could be enhanced with more effective tourist campaigns overseas, easier entry and more competitive air services competition. A more diversified intake of international visitors would reduce the dependence of Australian tourism on certain countries. There is also a need to better understand the commonalities and market synergies between tourism and international education.

Notes

1. Beijing, Tianjin, Shanghai, Jiangsu, Fujian, Guangdong and Hainan. An additional area of liberalisation in ChAFTA is the possibility for Australian providers to establish age care institutions throughout China.
2. The Revised System of Health Accounts (OECD/Eurostat/WHO, 2017) was recently established to provide a framework to record trade in health services. However, no data are available for Australia yet.
3. Definitions of the sector sometimes seem to be inflated by other health services, such as wellness treatment. Numbers based on visa applications only exist in cases where visas are required and when medical reasons are stated as the main reason for travel on the application. Data published by hospitals on the treatment of foreign nationals often do not distinguish between residents and non-residents. Also see Helble (2011).
4. See Chapter 6 on Governments initiatives for services competitiveness for a more detailed description of this program.
5. The Mining Contribution Index (MCI), a composite indicator including one on mineral rents as a percentage of GDP, summarises in a single number the mining and metals sector's contribution to over 180 national economies. Mineral rents are defined as production values minus "normal costs" so they loosely approximate the sum of tax and profit above "normal" profits from mining. For more information see ICMM (2016).
6. A caveat is that part of this drop may also be explained by a reduction in the price of intermediate goods relative to final output. An additional explanation might be that intermediate goods are used directly in the production process, while services are provided on a contractual basis with contract duration of several years.
7. For more information see: <http://dfat.gov.au/trade/agreements/chafta/fact-sheets/Documents/fact-sheet-trade-in-services.pdf>
8. <http://www.ictsd.org/bridges-news/bridges/news/pacific-alliance-eyes-new-trade-deals-with-creation-of-associate-member>
9. <https://www.austrade.gov.au/About/about>. The figure of AUD 424 million includes both administered (EMDG) and departmental funds. Austrade's departmental appropriation was AUD 198.4 million in 2016-17.
10. For more information, see: <https://www.csiro.au/en/Research/Mining-manufacturing>.
11. <https://industry.gov.au/industry/IndustryInitiatives/AustralianIndustryParticipation/Pages/default.aspx>.
12. It should be noted that no known dispute settlement case has been brought before WTO dispute settlement tribunals concerning national treatment measures regarding mining or mining services (OECD, 2017a).
13. This section focuses on higher education. According to the United Nations Central Product Classification, higher education includes post-secondary general, technical and vocational

education services as well as other higher (tertiary) education services leading to a university degree or an advanced research qualification such as a doctoral degree. The main providers of higher education services in Australia are universities, technical and further education (TAFE) institutes (which are owned, operated and financed by the various state and territory governments and provide vocational tertiary education courses) and registered training organisations (RTOs).

14. Revised ABS data indicates that Education-related travel services exports were valued at around AUD 26 billion in 2016, accounting for 33% of total services exports. The revision results from improvements made to the model ABS uses to estimate trade in travel services, and access to updated data sources, which, in August 2017, led to changes to a range of international trade in services data. The international services trade data used throughout this publication are taken from publications prior to August 2017, and thus are not the latest data available. For more information on the revisions to international services trade data please refer to the following ABS publication, Information Paper: Changes to the Australian System of National Accounts, 2016-17 (catalogue no. 5204.0.55.012).
15. These figures refer to 'Education-related travel' exports (from ABS BoP data) covering expenditure on course fees, accommodation, international travel, daily living costs, etc., and to all sub-sectors of educational services: primary and secondary, higher and tertiary, and other education and training programmes, such as English Language Intensive Courses for Overseas Students (ELICOS) and Vocational Education and Training (VET). Source: ABS, *International Trade in Goods and Services*, catalogue no. 5368.0 Table 9.
16. For more information, see the full year data on higher education statistics in 2016, available from the Department of Education and Training (DET).
17. For more information, see the end of year summary of international student enrolment data in 2016 available from DET.
18. Most (85%) of international students enrolled with Australian education institutes providing off-shore services were studying at off-shore campuses, while a small minority (15%) were receiving educational services through distance learning from Australian institutes.
19. Source: Department of Education and Training, Total VET Activity (TVA) data 2016.
20. For more details, see 2016 data on the global flow of tertiary-level students data from UNESCO.
21. More information is available from the Department of Education and Training, International Student Survey 2016.
22. The TPS assists international students whose education institution is unable to fully deliver their course of study and ensures that students are able to either complete their studies in another course, with another education institution or receive a refund of unspent tuition fees.
23. Mode 4 export also occurs in the business model adopted by Australian VET providers with licensing agreements with foreign partners to deliver Australian accredited and recognised courses, which requires Australian VET officials to visit their foreign partners to assess the quality of the courses and ensure that certain Australian Skills Quality Authority (ASQA) requirements are met.
24. This framework was a response to the 'Future directions for streamlined visa processing' report (DIBP, 2015), containing recommendations to enhance the system's long-term financial sustainability, Australia's border integrity and simplify the application process. In response a finding of some cases of misconduct by unregistered education agents, the Australian Government introduced measures in its *Protecting Vulnerable Workers Policy* (2016) and the *Migrant Worker's Taskforce*. The report also highlighted a large number of 'non-genuine'

students entering Australia. About 11 000 student visas were cancelled in 2015, after further assessments revealed these visas were being used as a pathway to permanent immigration.

25. The two visas types are: the Student Visa (subclass 500), and the Student Guardian Visa (subclass 590). The latter is foreseen for parents, relatives or other legal guardians of international students younger than 18 years of age studying in Australia on a student visa. A student visa is granted only if the prospective student is enrolled for a course that is registered, or is part of a registered course (a registered course is an education or training course offered by an Australian education provider registered on the CRICOS to offer courses to overseas students), on a full time basis. International student visas allow a maximum of 40 hours per fortnight while the course is in session and unlimited hours during scheduled course breaks. Students completing a Masters' degree by research or a doctoral degree (PhD) do not have work hours restrictions. The salary and employment conditions will be determined by the applicable Australian workplace law and international students can seek advice from the Fair Work Ombudsman on their salary and entitlements under the *Fair Work Act 2009*.
26. Misperceptions arose by foreign students and education agents that SVP was a 'stamp of quality' and therefore disadvantaging non-eligible education providers. Moreover, the practice of "course-hopping" was mostly associated with international students targeting education institutions eligible for SVP and then, once they obtained the student visa, switching to easier or cheaper education providers – e.g. from higher education to VET (PC, 2015b). An attempt to tackle this practice was made through the *National Code*, a legislative instrument of the *ESOS Act 2000*, which imposed a six month transfer restriction period for incoming international students.
27. Very few countries offer student loans to non-citizens as well as 'home' students. Norway grants loans to EEA and EFTA students. Exceptionally, as part of the recent Australian Higher Education Reform Package, which will commence from January 2018, New Zealand citizens will be eligible for student loans, although at the cost of no longer being entitled to Commonwealth fee subsidies.
28. For example, the *Australia Awards Scholarships*, administered by DFAT, is available to students from Asia, the Pacific, Middle East and Africa wanting to pursue full-time undergraduate or post-graduate studies in Australia. Recipients must return to their home country once graduated. The Australian Government also offers two additional scholarships to international students wanting to undertake a postgraduate qualification at Masters or PhD level (*Endeavour Postgraduate Scholarship*) or a postgraduate research qualification (*Research Training Program*). Some Australian universities offer financial support to selected international students, covering tuition fees and other costs fully or partly. The United Kingdom offers many government funding opportunities to overseas students (e.g. through the *British Chevening Scholarships*, the *Marshall Scholarships*, and the *Overseas Research Students Awards Scheme*). In addition, several UK universities offer scholarships to a wide range of international students. Similar opportunities are available in Canada, where many universities offer scholarships to international students. The Japanese Government also awards scholarships to international students wishing to study at Japanese universities.
29. International students receive 35% off multiple services in New South Wales and a discount in the Northern Territory. International students in Queensland and in Victoria pay a full-priced fare.
30. Following a consultation early in 2017, the Australian Government revised the *National Code of Practice for Providers of Education and Training 2018* (National Code), to come into effect on 1 January 2018. The National Code is a legislative instrument made under the *ESOS Act 2000*.

31. The Temporary Graduate visa (subclass 485) has two streams: a Graduate Work stream, with a length of stay of maximum 18 months (mostly for studies leading to a diploma level qualification or trade qualification closely related to nominated skilled occupations); and a Post-Study Work stream, which allows foreign students holding higher education degrees from CRICOS-registered education providers to stay 2-4 years.
32. Regulatory requirements are also in place for the accreditation of VET courses provided off-shore. VET providers must adhere to Australian accreditation requirements for the credentials and qualifications issued abroad to be nationally recognised, hence allowing the foreign graduate to use them in Australia. VET providers can offer qualifications in line with the AQF offshore (which needs to be audited at RTOs' cost), but can also have a top-up element to the AQF qualifications that covers aspects specific to the local labour market. Nevertheless, evidence from some Australian VET providers active overseas and consulted for this project reveals the intention of moving away from Australian accreditation so as to have more flexibility on curricula and to target more closely local standards so that the qualifications provided abroad are effectively recognised in the market where they are delivered.
33. RTOs like VET or ELICOS providers, offering training and courses to international students, must also register on CRICOS. The registration is not unique to the provider but rather a separate CRICOS application is required for each state or territory where the provider offers its services, increasing compliance costs.
34. For more details see the recently updated version of ELICOS Standards 2018: <https://www.legislation.gov.au/Details/F2017L01349>.
35. Australian higher education institutions have already started offering versions of their established programmes online due to the scale of its internal distances, which disadvantages students living in rural or remote areas of the country. A common platform for accessing this option is via Open Universities Australia, the national leader in online higher education, offering students the ability to choose over 150 degrees across a variety of disciplines from ten leading Australian universities.
36. Decree 73 on Foreign Investment in Education and Training (Decree 73/2012/ND-CP). See also Australian Government (2013).
37. Under the Agreement Establishing the ASEAN-Australia-New Zealand Free Trade Area (AANZFTA) the minimum required teaching experience of foreign staff has been reduced to three years. See also Invest ASEAN (2012).
38. Foreigners with high skill levels and specialists whose skills are urgently needed in China can apply for an R visa renewable every 180 days. Highly skilled workers can then get a five-year working residence permit. This visa, intended to attract global talent, began in 2013 and makes it easier to work temporarily in China. Once having worked in China for three years, eligible workers can apply for a Chinese green card.
39. For more details, see the Tourism Australia, International Visitor Survey, available at: <http://www.tourism.australia.com/en>. According to the ABS Tourism Satellite Account statistics (cat. no. 5249.0), total consumption by non-residents on inbound trips amounted to nearly AUD 45 billion in 2016-17.
40. According to IATA, the PMC is considered more of a departure tax than an airport charge, as its revenue is collected by the DIBP and does not directly contribute to passenger processing at airports.
41. The Productivity Commission suggested tackling this lack of competition by providing unrestricted access to foreign airlines operating air transport services to and from Australian's major gateway airports through open sky or open capacity agreements (PC 2015c).

42. More details can be found in the Tourism Investment Monitor 2017, from Tourism Research Australia, made available at <https://www.tra.gov.au/>.
43. While this figure refers to all passengers, including domestic ones, expenditures by international passengers contributed to more than half.
44. For additional information on current investment promotion initiatives in the tourism sector see: <http://www.tourisminvestment.com.au/en>.
45. However, that the term “skilled” used by Deloitte (2015b) does not align to the definition of skilled for migration (visa) purposes, which is referenced to Skill Level 1 to 3 occupations in the Australian and New Zealand Standard Classification of Occupations (ANZSCO).

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Chapter 6. Promoting Australia's services competitiveness

Chapter 6 provides an overview of current Australian government initiatives and policies for promoting Australia's services competitiveness and exports. The chapter sets out activities and programs to fostering innovation through research and development, examines the regulatory environment for the digital economy, and delineates efforts in place to encourage SME participation in global markets. Export promotion strategies are reviewed and compared to the approaches of certain trading partners, and feedback from exporters based on structured consultations is reported.

Recognising that innovation is a key driver of productivity and competitiveness, this chapter reviews a number of government initiatives to support projects in this domain. Government programs to encourage SMEs growth and their export prospects are also presented in this chapter. The chapter also includes a brief review of government export promotion strategies, as well as the views from the stakeholder consultation regarding Australian businesses' experience of these initiatives and possible areas for improvement.

Programs supporting R&D

The Australian Government has various initiatives to sustain productivity and economic growth by supporting innovation and more inclusive participation of Australian SMEs. The 2015 National Innovation and Science Agenda (NISA) set out a series of measures for bringing innovation and science to the forefront of the policy agenda, introducing Industry Growth Centres (Box 6.1) new policies to back small businesses and start-ups, and new programs and funding to sustain further innovation.

As part of NISA, new tax incentives are also available for start-ups involved in innovation, which include a 20% non-refundable carry-forward tax offset on investment, capped at AUD 200 000 per investor per year, and a ten-year capital gains tax exemption for qualifying investments held for at least one year.¹ This additional measure has been introduced to help new and small companies at an early stage of innovation to overcome the financial difficulties they might face in undertaking innovative projects.

Another tool for supporting innovation is the Research and Development (R&D) Tax Incentive (R&D TI), providing companies with a tax offset on part of their outlay on innovative activities (above AUD 20 000).² The program is jointly delivered by Innovation Australia – assisted by the Australian Government's Department of Industry, Innovation and Science (DIIS) – and the Australian Taxation Office (ATO). Firms with an annual turnover less than AUD 20 million receive a refundable offset, currently set at 43.5%, whereas firms with a turnover of AUD 20 million or more receive a non-refundable offset, currently set at 38.5%. The R&D offsets are available for up to AUD 100 million of R&D expenditure. R&D expenditure beyond this amount is eligible for an offset at the prevailing company tax rate. Eligible companies must pay income tax in Australia, although they can be in a tax loss position, and submit multiple forms, one of them being a R&D TI schedule listing all R&D claims.³

The views of Australians

Companies interviewed during the stakeholder consultation considered the R&D TI a welcome cash-flow injection into innovative projects. Many participants saw the 43.5% rate as quite competitive compared to similar programs in other countries, but found the cut-off threshold for this rate (turnover below AUD 20 million) relatively low. All companies cited challenges due to high compliance costs, e.g. the complex application process (seen as unnecessarily burdensome and time consuming), and the administrative reporting requirements for keeping the tax incentive going once the application is submitted.

The complexity of the application and administration process of the R&D TI hits smaller companies and services providers even harder as they lack the know-how, time and resources to invest in learning the process; hence, they may resort to large consultancy firms for these tasks. While the consultancy fees are often deducted at the end, they are still seen as missed cash flow that accrues to third-party companies and not to the

businesses undertaking R&D projects. A recent survey by the Centre for International Economics (CIE, 2016) estimated that the average compliance cost of the R&D TI in 2014-15 to be between 8% and 23% of the program benefits, for large and small businesses respectively.⁴ Around half of the total compliance costs (AUD 118 000 and AUD 27 000, for large and small businesses respectively) were fees paid to specialist advisers.

Active trading partners

Foreign governments have similar tax incentives in place to sustain R&D projects and foster innovation (OECD, 2017a). For instance, the United Kingdom offers R&D reliefs to support companies that work on innovative projects in science and technology. There are different types of R&D reliefs depending on the size of the company and on the subcontracting of projects. The SME R&D relief allows qualifying SMEs to deduct an extra 130% of their qualifying costs from their yearly profit, as well as the normal 100% deduction, to make a total 230% deduction, and claim a tax credit if the company is loss making, worth up to 14.5% of the surrenderable loss.⁵ Large companies can claim the Research and Development Expenditure Credit (RDEC), which grants a refundable tax credit for 11% of all qualifying R&D expenditure (12% from 1 January 2018).⁶ While there is no floor for any type of R&D relief in the United Kingdom (Australia has a minim expenditure of AUD 20 000), there is maximum ceiling only for SMEs projects at EUR 7.5 million (about AUD 12 million); large companies do not have a ceiling on R&D expenditure.

The United States has a R&D Tax Credit, although it only provides funding to firms making a profit. This does not help start-ups or small businesses that are not generating profits yet. In 2016, however, the program began to include offsets of payroll taxes for businesses with total annual turnover below USD 5 million. Due to this change, US companies can now receive a benefit for their research activities even if they are not profitable. The maximum benefit claimable against payroll taxes each year is USD 250 000 (approximately AUD 319 000). However, it remains to be seen whether these recent changes to the R&D Tax Credit have made it more effective for smaller businesses.

Encouraging SMEs' innovation and export prospects

The Australian Government's DIIS has various programs for helping small Australian businesses to grow and internationalise. The Global Connections Fund (GCF), launched in 2016, consists of two types of grants: bridging grants and priming grants. Bridging grants (AUD 25 000 – 50 000) must be spent on seed funding capital to help Australian SMEs either scale up or test their commercialisation strategy. One application proposal per SME-researcher partnership can be submitted.⁷ Industries eligible to receive the grant are those deemed Industry Growth Centre priorities (Box 6.1).

Priming grants are intended for partnerships between Australian firms and international research partners to explore collaboration in certain priority economies, with AUD 7 000 per successful applicant.⁸ Funds can be used for physical meetings with international partners in foreign locations, to develop collaborative ideas and leverage overseas researchers' academic expertise to help them compete on the international stage. In 2016, priming grants were provided overwhelmingly to Australian firms partnering with the People's Republic of China (hereafter "China") and the United States, with the majority

being approved in the advanced manufacturing priority area, followed by medical technology and pharmaceuticals.

Box 6.1. Targeting key sectors with Industry Growth Centres

The Industry Growth Centres initiative is an industry-led approach to promote innovation, productivity and competitiveness. The Australian Government has allocated AUD 238 million over four years and set up six Growth Centres to act as industry associations for specific sectors. Each Growth Centre has a long-term strategy for its sector and key objectives for addressing unnecessary and over-burdensome regulation, increasing the connections between research and industry, improving workforce skills, and fostering engagement in international markets by enhancing integration into global value chains. The six sectors chosen as areas of competitive strength and strategic priority are:

Advanced manufacturing: to date, the Growth Centre has already established three major innovation hubs to stimulate research-industry connections, funded collaborative projects and similar initiatives. This Growth Centre focuses on complex research and design work in the pre-production phase as well as value-adding post-production opportunities, in the form of on-going services. These activities are essential to retain Australian businesses' competitiveness, by increasing the innovation and quality content of their products.

Cyber security: the Growth Centre aims to improve coordination and collaboration between government, businesses and the research community on current and future security challenges, and to work together to build strong cyber defences. The focus is also on improving strong cybersecurity capabilities by investing in the necessary skills to anticipate and respond to cyber threats.

Food and agri-business: this Growth Centre focuses on improving firms' innovation readiness by raising their intra-collaboration and their linkages to research. Another aim is to facilitate access to new markets and help integration of new businesses in the international sphere by reducing regulatory burdens to export.

Medical technologies and pharmaceuticals: the Growth Centre aims to make Australia an Asia-Pacific hub for medical technologies and pharmaceuticals. Project fund programs are already established, the clinical trials landscape has been surveyed to boost Australia's attractiveness as a research-driven destination, and work has begun to support smaller businesses and industry-driven research geared to the needs of the sector.

Mining equipment, Technology and Services (METS): the Growth Centre focuses on creating an identity for the sector and a globally recognised brand; increasing the level of engagement in global value chains, by fostering international collaborations and partnerships; aligning strategies to respond to customers' needs; and enhancing the skill base of the sector to respond to a rapidly transforming technology environment.

Oil, gas and energy resources: the Growth Centre aims to enable innovation in new and existing business models, improve skills, develop better commercialisation strategies, and address the regulatory environment to facilitate innovation and productivity. To date, it has already established several collaborative projects, introduced support for SMEs in the form of innovation vouchers, set up mentoring programs for smaller businesses, and commenced work to align the sector regulatory environment towards best practice regulation.

This initiative represents a national approach to industry policy, with each Growth Centre addressing barriers to international competitiveness at the sector level, by adopting concerted efforts to enhance Australian businesses innovation and productivity levels.

Another competitive grant program for Australian SMEs is the Business Research and Innovation Initiative (BRII). The program, launched in August 2016 under NISA, aims to drive innovation within Australian SMEs and Australian Government agencies by encouraging SMEs to develop innovative solutions to important public policy and service delivery challenges. The challenges are proposed by agencies and selected by the Government, on advice from Innovation and Science Australia. The program's initial round has awarded 29 grants totalling AUD 11million in funding for companies developing solutions for the five challenges selected by the Government.

In 2016, Austrade launched the Landing Pads initiative to help Australian market-ready start-ups with funded access to a co-working space, for up to 90 days, in some of the world's most vibrant and innovative hubs such as San Francisco, Shanghai, Singapore, Tel Aviv and Berlin. Applicants need to be active start-ups with a global vision and scalability potential, ready for an international experience. Landing Pads help firms access local facilities, meet potential partners or investors, tap into a contact network, tailor-made mentorship and business development assistance. These strategic locations also act as regional hubs for firms to get a foot on the ground in foreign markets, including expanding into neighbouring countries (Box 6.2).

Box 6.2. OpenCities: A way of digitalising government services

OpenCities, an Australian start-up that helps local governments provide digital community services, is a successful example of the Landing Pads initiative. It was founded in 2011 initially to provide consulting and customised services to local councils in Australia and New Zealand. Over time, OpenCities began offering more services to help local governments move from paper-based, 9-5 style phone call interactions to 24/7 mobile-friendly online services. OpenCities is transforming the way cities deliver services to their communities, by providing digital solutions that increase customer service satisfaction and partly reduce city councils' operating costs. Examples include the possibility to complete online transactions at any time and from any device, paying parking tickets on mobile phones, finding out the schedules of basic services, keep track of upcoming events around the city, and a range of other services that allow citizens to engage with their city council online.

As the challenges faced by local governments are widely shared around the world, OpenCities is expanding further and opening a base of operations in the United States. This decision was facilitated by the Landing Pad initiative and, in 2016, OpenCities managed to secure a spot in San Francisco. Since landing in one of the world's leading tech-hub, it has won several awards and expanded to supply their product to American city councils in Miami, Orlando and City of Grand Rapids. Having signed up some major US metropolis, OpenCities is now focused on extending its reach and use its success in the United States as a platform for launching into the Canadian market.

Source: Australian Trade and Investment Commission.

The Australian Government has various programs to facilitate knowledge transfer, such as the Entrepreneurs' Program (expanded through NISA and delivered through AusIndustry) launched in July 2014. It aims to transmit the required know-how from industry experts to Australian businesses, researchers and entrepreneurs, for developing their potential and finding opportunities for growth in their field. Advice can be in the form of information on grants options, specialised industry knowledge, connection and collaboration opportunities. Applicants for some program services need to be working in

one of five priority industry sectors. Tourism business operators in Northern Australia are also eligible for this program. The program support Australian businesses with a turnover (depending on the program element) between AUD 750 000 and AUD 100 million.⁹ The Entrepreneurs' Program shares similar characteristics with other foreign government initiatives (discussed later), which also seem to pick established SMEs that already have a successful business model and market base.

AusIndustry finances the Incubator Support initiative too, designed to provide funding to new and existing incubators, to deliver services for improving the commercial success of Australian start-ups in international markets. Services delivered by the funded incubator include seed funding, co-location, mentoring, professional services and access to networks. Existing high-performing incubators and new ones can apply for a grant of AUD 10 000 – AUD 500 000 per project and for a maximum of two years. The incubator must have an Australian Business Number and be able to match the funding received, and the institution must prove its management and business capacity, expected impact and benefits of the project and value for money. More funding is available to sustain an Expert-in-Residence where national or international expert advisers can be brought in by the incubator to give advice and enhance the expertise housed in the incubator. The funds available for these experts range between AUD 1 000 and AUD 25 000 per project per year.

Australian companies can find additional financial support from the Export Finance and Insurance Corporation (Efic), Australia's export credit agency and part of the Foreign Affairs and Trade portfolio. The early stages of growth are typically marked by uncertainty, particularly for smaller innovative firms that operate in complex and risky environments and without the tangible assets to guarantee bank loans. Therefore, it is even more difficult for these SMEs to access traditional financing channels since lending institutions are averse to risky ventures without collateral. Efic differentiates itself by backing SMEs, which might lack tangible securities, ensuring that they still have enough funds to operate and meet their export contracts. Efic operates a Small Business Export Loan that provides a government-backed loan solution obtainable through an easy online application and fast approval. Eligible businesses must have a turnover between AUD 250 000 and AUD 10 million and must have been trading for at least two years. Finance solutions are also available to established Australian SMEs that want to undertake an export venture, with First Time Exporters Loan starting at AUD 250 000. To counter SMEs' cash flow risk, Efic provides access to an export line of credit with loans starting at AUD 100 000, with the flexibility to be drawn and repaid multiple times during the loan term.

Efic helps to overcome barriers to export finance by working closely with banks and private financiers, exporting SMEs, Australian companies engaged in export supply chains or wanting to establish abroad to better service their foreign clients, and Australian companies operating in emerging and frontier markets. It facilitates the uptake of trade and investment opportunities abroad through a global network of partners, including government agencies, national and regional export bodies, industry and professional associations, and chambers of commerce. In 2015-16, Efic supported over 110 SMEs with 191 transactions, totalling AUD 155 million.

Trading partners share SME priorities

Foreign Governments have well-established programs and initiatives to enhance the competitiveness of their domestic SMEs and encourage them to innovate to ensure

successful performance overseas. Innovation can be facilitated by technology transfers borne out of strategic partnerships. For instance, the Partnerships for Capability Transformation (PACT) program by the Ministry of Trade and Industry (MTI) of Singapore MTI (2017) encourages collaboration between large and small enterprises, to help SMEs build capabilities and access business opportunities. Larger firms with at least SGD 100 million (approximately AUD 94 million) in sales revenue are eligible for this program. These might be large domestic organisations, MNEs, government agencies or related companies. Eligible SMEs must operate and be registered in Singapore, with a minimum of 30% local shareholding, and have fewer than 200 employees or an annual turnover below SGD 100 million. The program aims to help SMEs integrate into existing value chains and foster innovation, by working in a test-bed environment in partnership with larger firms and by collaborating on developing innovative solutions. Approved projects are eligible for up to 70% funding support for qualifying development costs. Such partnerships could accelerate SMEs' growth, helping them stay competitive while scaling up locally or overseas.

This program resembles Australia's Global Connection Fund in its aim of fostering inter-firm collaboration. Other foreign governments have set up programs to fund business accelerators or incubators to help smaller businesses to become more competitive and enter new markets, encouraging entrepreneurship and innovation and supporting young businesses with high-growth potential.

New Zealand has a similar program to Australia's Incubator Support initiative, funded by Callaghan Innovation. The Incubator Support Program is designed to contribute funding to technology-focused incubators or founder-focused incubators, the latter defined as providing entrepreneurs with access to support, networks and investment that help develop a business idea and then test it in the market. To encourage firms to use the incubator, each company within the incubator receives up to NZD 450 000 for two years. Firms need to partly self-fund their stay in the incubator with at least NZD 150 000. Within the incubator, assistance is provided through practical support including technology and market validation, business planning, capability development, investment preparation, governance and advisory board advice.

Similarly, the United Kingdom's Entrepreneur First (EF) program facilitates high-tech start-up growth. This GBP 40 million fund, led by the British Business Bank, created in 2011, has worked with 350 individuals to build over 100 successful start-ups. In 2018, it planned to supply GBP 26 million in investment funding to over 100 British companies. In the six-month program, engineers, academics and software developers form teams and work together to co-found start-ups. Living costs are covered as well as office space, legal and administrative support. Mentoring is also provided. In 2016, EF expanded abroad by opening applications for a Singapore program.

The United States runs the Small Business Innovation Research (SBIR) program, which is akin to Australia's BRII. This federally administered seed fund links start-ups and Federal agencies to work together on innovative projects. Federal agencies, with an annual budget over USD 100 million must contribute part of their R&D spending to finance the commercialisation and development of SMEs' innovative ideas.¹⁰ To gain funding, firms must prove that their idea has technical merit, is feasible and has commercial potential. Each SME can receive up to USD 150 000 for a given project, to be spent over six months. Beyond this period, the program assesses whether more funding would benefit the SME. If so, up to USD 1 million is made available to the SME, to be used within two years. In 2012, 5 509 funding agreements, totalling more than

USD 2 billion, had been provided. In 2016, it was estimated that the total amount awarded since inception was over USD 43 billion.

Networking, advice and export promotion strategies

The Australian Trade and Investment Commission (Austrade) offers a series of programs to Australian businesses, educational institutions, tourism operators and government agencies, aiming to promote and support Australian companies in international markets. Austrade generates market insights, assists trade policy development, establishes connections through its global network of contacts, and provides advice and services for Australian businesses. Austrade currently operates 81 offices overseas in 49 countries around the world and has ten offices in major Australian cities.¹¹

Austrade's main onshore and offshore trade-related priorities are fourfold. Two of them relate to businesses generally, namely to assist Australian companies to grow their business in international markets and to provide coordinated government assistance to attract and facilitate productive FDI into Australia. The other two are targeted to major industries in the services sector, i.e. to promote the Australian education and training sector in international markets, and to deliver programs and research to strengthen and expand Australia's tourism industry. According to the 2015-16 Annual Report, Austrade was achieving relatively high satisfaction rates among its clients, and had facilitated investment outcomes for 81 of the businesses that engaged with them (Austrade, 2016a).

One of Austrade's funding programs is the Export Market Development Grant (EMDG), which provides funding to current and aspiring exporters to help offset export promotion activities. The scheme reimburses up to 50% of eligible export promotion expenses above AUD 5 000, provided the total expenses are at least AUD 15 000. Each applicant can apply for a maximum of eight grants (one per year) and the years need not be consecutive. The grant is capped at AUD 150 000 per applicant in a given year. Eligible applicants' annual turnover must not exceed AUD 50 million in the grant year; thus, the grant is designed to help export-ready SMEs build a brand for their products overseas. The grant covers the cost of conferences and events held in Australia, registration and/or insurance of eligible intellectual property rights, trademarks, etc. In 2016-17, grants worth AUD 131.4 million were paid to 3 166 businesses (average grant AUD 41 000). Three quarters of recipients were small businesses with annual income below AUD 5 million; 65% of the grants went to services industries. The top five overseas markets reached by the EMDG scheme were the United States, the United Kingdom, China, Singapore and Hong Kong, China (Austrade, 2016b).

Austrade provides advice and support to Australian businesses through its networks of partners, including States and Territories agencies, industry bodies and chambers of commerce. Some of the services include IT platforms, export-readiness assessments, assistance with trade missions and trade fairs, and referencing Australian businesses to specific professional services providers that could help kick-start export plans. Some basic services are provided free of charge, but more tailored ones, such as market entry and expansion advice, are charged a fee of AUD 275 per hour to start with.

Austrade assistance to the education sector involves providing market analysis, targeted research, briefings and promotional events, and subscription-based online services such as the Market Information Package (MIP) offering market insights to help higher education providers identify business opportunities and trustworthy foreign partners. Additional online tools allow education providers easy access to international education

data, including international student enrolments, student visas, and related data (field of study, courses, institutions, gender, age range, scholarship status, country of origin, etc.). Austrade also helps Australian VET providers going overseas, particularly to ASEAN markets, by promoting accredited training abroad while aligning their content to local industry needs.

In the tourism sector, Austrade is responsible for marketing and promoting Australia's image abroad to increase inbound tourism. Austrade hosts Tourism Research Australia (TRA), the country's leading provider of tourism intelligence, research and analysis. In conjunction with DoHA and Tourism Australia, Austrade manages Australia's Approved Destination Status (ADS) scheme. The scheme establishes a regulatory framework for Chinese tourists travelling to Australia in guided tours, organised by outbound tour operators approved by Australian and Chinese government authorities – a particularly interesting initiative since China is Australia's most valuable, fastest growing and highest spending inbound tourism market. This scheme was the catalyst of a five-year MoU between the Australian Government and the China National Tourism Administration in 2006.¹² The MoU, which was recently renewed, aims to enhance the tourism partnership, business dialogue and people-to-people connections between the two countries.¹³

Besides Austrade, the Growth Centre initiative (Box 6.1) provides various programs that help Australian businesses to network and to perform internationally. For instance, METS Ignited, introduced in 2016, is an extensive support program for mining-related services. It includes promotion of the Australian METS brand and various opportunities to facilitate global partnerships such as developing major Australian networking events for METS and the mining sector, fostering peer-to-peer learning among SMEs to facilitate access to supply chains and developing training programs for export-oriented METS SMEs. MTPConnect, formed in 2015 as part of the same initiative, is a particularly active Growth Centre in the health sector. The MedTech and Pharma (MTP) Growth Centre fosters collaboration and competition, aggregates existing knowledge and shares it with the broader sector. It aims to boost the growth of the medical technologies, biotechnologies and pharmaceuticals sector to achieve greater commercialisation and establish Australia as an Asia-Pacific hub for MTP companies.¹⁴ Alongside federal-level support, Australia's State and Territory governments provide various trade promotion initiatives such as networking events abroad, trade missions and additional funding for international marketing.

Feedback on Austrade activity

Many of the companies interviewed during the stakeholder consultation considered that the quality of Austrade services was in general satisfactory. There was consensus that Austrade is particularly successful at organising networking events and trade missions, but several businesses reported that these events often do not lead to new contracts. There was also a call for more targeted meetings and better connections to the right professionals. Some felt that the New Zealand Trade and Enterprise (NZTE), Austrade's equivalent, was better able to put businesses in touch with the right industry experts for pursuing their export strategy. Some expressed doubts at how Austrade measures success (in terms of trade-related events rather than concrete business outcomes).

Participants also mentioned a lack of specific knowledge and technical expertise by Austrade in certain sectors, particularly in health services, mining-related services and financial services, and asked for greater and more effective trade promotion as well as better value for money. Charging by Austrade was found to be very unpopular and

excessive for smaller businesses, which must pay amounts comparable to the charges of private consulting firms. Many felt that there should be more focus on SMEs to facilitate their understanding of foreign cultures and business practices to better engage with partners overseas, especially in Asia. Various companies argued for a more pro-active role from Austrade after the first few months and for follow-ups to ensure they are adequately supported in their internationalisation.

A number of participants referred to the compliance costs associated with obtaining and managing the EMDG and the related choice by some companies to outsource the application and administration process to external consultants.¹⁵ Some participants drew parallels with similar foreign government initiatives, in particular in New Zealand and Singapore, which have much smoother application processes and faster turnaround. Singapore, specifically, was reported to offer a one-stop shop for a whole range of support programs, from assisting companies (including foreign ones based in the country) with government grants and initiatives free of charge, and with much less “paper handling”, to helping fund the recruitment of foreign skilled professionals and handle visa procedures. Market gap analysis to benchmark each business’ current performance and identify which opportunities match their business strategy better is also part of these programs. While recognising that the city-state of Singapore is not comparable to the Australian Federal Government, there could still be some important lessons to learn for Australian states and territories in terms of offering a more integrated approach to businesses that would allow them to address a wide range of issues at the same time.

Several participants also pointed to the excessive institutional fragmentation that characterises Australia's approach to export promotion. With Austrade, DFAT, Efic and several State and Territory representatives, there are too many players on the ground; this might not only duplicate efforts, but might as well confuse both Australian businesses and prospective foreign investors. Austrade and DFAT are seeking to address this issue by participating in various forums to improve the harmonisation of state, territory and commonwealth activities on trade and investment promotion. In the tourism sector, several working groups consisting of representatives from the Australian Government, industry and state and territory governments are working together to develop an integrated framework for tourism. Nonetheless, better coordination between federal and state-level initiatives is needed for all sectors of the economy, as for instance is the case in Canada, to address what businesses perceive as uncoordinated effort in Australia and overseas.

Opportunities to upgrade impact

Foreign governments have a long list of export promotion initiatives to support the internationalisation of their businesses. Stakeholder consultations signalled Singapore as the government offering the best integrated support for overseas expansion of Singapore-based companies and for attracting foreign investment into the country. International Enterprise (IE) Singapore, a government agency promoting international trade, has a set of comprehensive assistance schemes for building business capacity and establishing connections necessary to ensure firms can profit from strategic partnerships and get greater access to overseas markets.

One such scheme is the Global Company Partnership (GCP) grant, which helps businesses defray the costs of overseas market expansion. The grant covers the cost of engaging with third-party professionals to build strategic knowledge around branding, e-commerce development, internationalisation strategies, IP management and franchising.

Market access research is funded too, as is part of the cost of establishing a permanent presence abroad. Recognising the challenges in recruiting key talent when expanding globally, it supports the cost of using recruitment agencies to hire senior executives and develop international human resource strategies.¹⁶ The grant covers up to 70% of eligible costs incurred by SMEs (up to 50% for larger businesses). The business headquarter must be in Singapore, with a minimum paid-off capital of SGD 50 000 and annual turnover of at least SGD 500 000.

IE Singapore also offers financial support to businesses to access credit to launch internationalisation projects. This broader program includes schemes for underwriting companies' insolvency risks and co-funding insurance premiums to protect against buyer defaults.¹⁷ Moreover, firms can obtain a 200% tax deduction on eligible expenses when carrying out qualifying market expansion and investment development activities, through the Double Tax Deduction Scheme for Internationalisation.

IE Singapore provides further help to local companies through a Market Readiness Assistance (MRA) grant, co-funding the costs of market expansion plans. It covers up to 70% of eligible third-party costs for activities by businesses preparing to export. Activities whose costs are claimable include legal and tax advice, overseas expansion market assessments, and services related to market entry, identifying business partners, undertaking overseas market promotion and developing a digital strategy. The financial support provided to an SME is capped at SGD 20 000 per year (approximately AUD 19 000) and up to two applications per fiscal year, each limited to one activity (e.g. business matching, market entry, or participation in a trade fair). This program, similar to the Australian EMDG, offers higher refunding rates, covers a wider range of activities, has a smoother application process, but a lower cap compared to the EMDG (AUD 150 000).

Canada provides financial support to Canadian SMEs to explore new export opportunities through the program CanExport. The program is essentially a grant that funds business travel, participation at trade fairs, market research, adaptation of marketing tools to new markets, legal advice, etc. Businesses can claim up to 50% of the expenses on these activities, for a minimum contribution of CAD 20 000 per application. The funding is capped, with a maximum annual CanExport contribution per applicant of about CAD 100 000 (approximately AUD 102 000). Eligible businesses must have no less than CAD 200 000 and no more than CAD 50 million in annual revenue declared in Canada and a maximum of 250 employees. This program is similar to Australia's EMDG in reimbursing half the expenses incurred in export promotion, but starts from a higher base whereby Canadian SMEs do not receive a refund for the first CAD 20 000, while the equivalent threshold in Australia's EMDG is AUD 5 000.

Like Singapore, New Zealand also focuses on building business capabilities to help businesses expand overseas, with the NZTE Capability Development services and "Better by..." initiative series. NZTE offers investment readiness programs to help businesses develop sustainable capital-raising plans and co-funds investment of specific growth projects through the International Growth Fund (IGF) program. Different levels of co-investment for different investor profiles are available, with a government-to-customer co-investment ratio of 40:60, excluding capital expenditure. Eligible businesses must have less than NZD 500 million in international revenue. New Zealand, like many other countries, is investing in boosting business use of digital technology to seize new domestic and international opportunities. Programmes are in place to help businesses build the necessary digital skills for activities such as developing digital marketing

campaigns, improving their website rankings in search results pages and evaluating alternative digital solutions. These initiatives, alongside the commercialising of innovation described earlier, highlight how New Zealand aims to empower businesses by providing them with the skill and funding to compete successfully in international markets.

In the United Kingdom, the Department for International Trade (DIT), Austrade's equivalent acts to sustain business export and growth in global markets, and assists overseas companies considering setting-up in the country. For example, DIT offers UK SMEs up to 50% of the cost of market research projects through the Export Marketing Research Scheme (EMRS). The scheme provides free step-by-step advice on carrying out market research in new and existing markets. Furthermore, DIT, through the Trade Access Programme, funds UK SMEs and universities to attend overseas trade shows so as to gain relevant market knowledge and grasp additional business opportunities through contact with prospective foreign partners. DIT helps overseas businesses locate in the United Kingdom by providing sector-specific information and tailored advice on the UK economy, disseminated through a global network of embassies and consulates to help attract inward investors. Finally, DIT facilitates links between overseas buyers and UK businesses by providing a digital directory of potential buyers, suppliers and partners.

The United States has a similar International Partner Search program that matches US companies with prospective overseas partners. Maintained by the US International Trade Administration (ITA), it provides export-ready American companies with a list of international contacts that would be interested in partnering with them or who could represent them abroad. The program costs about USD 550 for SMEs and USD 1 400 for large companies. The US Government also funds the Export Assistance Trade Toolbox, started by the Trade and Development Agency (USTDA), to promote goods and services exports from the United States. Alongside the standard assistance package (such as advocacy services abroad, market intelligence, assistance at trade shows and so on), a novelty of this program is that it also funds reverse trade missions (foreign government officials and businessmen who visit the United States to get familiar with American service capabilities, technology and regulatory environments). In 2016, nearly 500 American companies received foreign visitors financed by the toolkit, enabling them to build connections and discuss potential business solutions (USTDA, 2016).

Another initiative from the US Department of Commerce is the Digital Attaché program. Piloted in 2016 by ITA, it provides American businesses abroad with advice on digital policies and internet regulatory aspects in specific foreign markets, including information on data localisation requirements, and advice on selling digital products or transferring data abroad. Guidance on how digital strategies such as global e-commerce channels could help firms internationalise is provided too.¹⁸ Moreover, the program leverages expertise from the ITA's e-Commerce Innovation Lab in Silicon Valley, which holds half-day interactive workshops to show companies how to develop actionable e-commerce strategies to export regionally or globally or to strengthen their existing plans.

Concluding remarks

Australia's support to innovation comes mostly via the R&D Tax Incentive, but its high compliance costs might compromise its effectiveness. Streamlining the application process can reduce the administrative and compliance costs associated with its current complexity. A recent assessment of the R&D TI, as part of a Government-commissioned review, found that “the large compliance costs for companies registering in the

program reduce the effective level of public support flowing to business R&D” (Ferris et al., 2016). There is also a need to develop a more integrated, whole-of-government approach to reduce complexity around the governance of the science, research and innovation system (OECD, 2017b). An inter-country comparison shows that other economies, in particular Singapore, are supporting innovation better, with various instruments that have a simpler application process, more generous incentives and faster handling of funds.

There is also scope for simplifying further the application and administration process behind the EMDG, to increase the effectiveness and inclusiveness of the scheme. More targeted meetings and better connections to industry experts from Austrade, and more detailed knowledge and technical expertise in some services sectors, are needed. Similar initiatives by some foreign governments, New Zealand, Singapore and the United Kingdom, seem to be more successful in that respect. Moreover, business consultations revealed that further prodding from the government, with adequate follow-up (financially or in terms of networking) after the initial stage of internationalisation, would help businesses thrive in foreign markets, minimise their risk of pulling out, and consolidate their position overseas.

Finally, simplifying the governance of export promotion activities by developing a more integrated approach and better coordination between state and federal-level initiatives could benefit both Australian companies and potential foreign investors. Singapore and Canada offer good examples in that respect.

Notes

1. This initiative, based on the United Kingdom Seed Enterprise Investment Scheme, raised over AUD 500 million in start-up investment for 3 000 companies in its first two years. See <https://www.innovation.gov.au/>.
2. The current description is based on the R&D TI as of May 2018. The recent Government's announcement on the 2018-19 Budget includes plans to reform the R&D TI starting from July 2018. The reform aims to improve the integrity of the program, continue support SMEs undertaking R&D activities and refocus support for the larger companies towards those undertaking additional, higher intensity R&D. Therefore, some aspects described here may be subject to change. For further information on the R&D TI reform see: https://budget.gov.au/2018-19/content/bp2/download/bp2_combined.pdf, and <https://www.budget.gov.au/2018-19/content/factsheets/6-tax-integrity.html>
3. Companies must apply for registration of all their R&D activities with AusIndustry (on behalf of Innovation Australia) within ten months from the end of their income year. Subsequently, companies can claim the tax offset in their annual income tax return by accompanying ATO's R&D TI schedule, detailing all R&D expenditure incurred in the income year.
4. Compliance costs include the time and resources required to complete the registration process with AusIndustry and a programme tax schedule with the ATO; and to maintain proper records to justify the activities and to respond to reviews and audits (Ferris et al. 2016).
5. SMEs are defined as companies with less than 500 employees and a turnover of under EUR 10 million (approximately AUD 15 million) and gross assets of no more than EUR 86 million (AUD 133 million). The values are in euros because the R&D tax credit scheme follows the European Commission definition of SME.

6. RDEC can also be claimed by SMEs who have been subcontracted to do R&D work by a large company or who have received a grant or subsidy for their R&D project.
7. The application process is particularly burdensome requiring an expression of interest and then a full application containing a budget outline. An interim 6 monthly progress report must follow, completed by a final one year report; finally there is a mandatory exit survey.
8. Brazil, China, European Union Member States, India, Israel, Japan, Korea, New Zealand, Singapore, Switzerland, Chinese Taipei, United States and Viet Nam.
9. Applicants from Remote Australia or Northern Australia have different turnover thresholds, ranging from AUD 750 000 to AUD 100 million.
10. See: <https://www.sbir.gov/agencies-landing>.
11. Sixteen of Austrade offices overseas are located in cities without an Australian embassy; hence, they provide consular services on behalf of the Australian Government too.
12. For more information see: <http://dfat.gov.au/trade/topics/pages/international-tourism-engagement.aspx>.
13. ChAFTA also targets China as a destination market for Australia investment in the tourism sector. The agreement assists Australian investment in tourism assets and grants Australian companies the opportunity to construct and operate hotels in China.
14. For more details see: <https://www.mtpconnect.org.au/>.
15. EMDG applications can be lodged by export grant consultants on behalf of firms. A recent review of the EMDG (Austrade, 2015) found that “the consultants’ share of EMDG claims has increased considerably over the past two years, from 58% in 2011–12 to 69% in 2013–14”. Also, in 2012, Austrade introduced a framework for a voluntary system aimed at improving the quality of applications prepared by EMDG consultants”. The report found that in 2013-14, only one-third of the EMDG applications were self-lodged.
16. The manpower development element of the GCP has an overseas market attachment program to facilitate intra-corporate transfers. It helps company employees acquire market knowledge, prepare for upcoming postings and gain relevant technical knowledge from overseas experts through exposure to international projects.
17. These schemes are the Internationalisation Finance (IF) scheme, the Political Risk Insurance Scheme (PRIS), the Loan Insurance Scheme (LIS/ LIS+), and the Trade Credit Insurance Scheme (TCIS).
18. Digital Attachés are based in US embassies and consulates in Brazil, China, Belgium, India, Singapore, and Japan. After positive reviews from stakeholders, the program was expanded to include Korea, Indonesia, Mexico, South Africa, Germany and France.

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Chapter 7. Policy conclusions

The analysis carried out in this report highlights the importance of services in the Australian economy. Evidence demonstrates the relative strength of Australia's services trade and productivity performance, and the opportunities arising from Australia's proximity to the world's most dynamic region. The report also highlights the challenges faced by Australian services exporting firms, including the risk of losing ground in stronghold sectors such as education and tourism. Furthermore, the empirical evidence included in the report highlights how services trade restrictions in foreign countries prevent Australia from exploiting its full export potential.

In this context, there is significant potential for services to sustain productivity and enhance the global competitiveness of Australian businesses. This section delineates key factors to be considered in response to the opportunities and challenges posed by a rising degree of globalisation and a growing tradability of services. On this basis, a strategic whole-of-government approach to the performance of Australian services in the global economy can help Australians fully capitalize on the strength of its services sectors and exporters to ensure that services trade works for all.

General key findings

- It is important to continue to promote regulatory reforms and the reduction of services trade restrictions in the applied regimes of priority markets abroad by, inter alia, advocating the potential of services reforms to drive inclusive economic growth and employment, ensuring the effective implementation of the APEC Services Competitiveness Roadmap and encouraging national and collective actions consistent with the G20 Strategy for Global Trade Growth.
- In addition to existing FTAs, it would be beneficial to continue pursuing bilateral, plurilateral, regional and multilateral trade agreements with ambitious market access, national treatment and domestic regulation provisions for services. Besides maximising the economic benefits accruing to Australians, this would also lock applied regimes and thereby secure a predictable and rules-based environment for services trade and investment. OECD empirical analysis confirms that the legal bindings found in services trade agreements tend to have a positive effect on services trade by reducing uncertainty.
- Continued investment in an efficient and effective visa system is desirable. The envisaged streamlining of the current visa system would be beneficial to international visitors, international students, and domestic as well as foreign businesses.
- Consideration could be given to the relationship between the Temporary Skill Shortage (TSS) visa and the cost of recruiting highly qualified foreign workers, and the ability of some international students to apply for jobs on the list of skilled occupations (with concomitant implications for the education sector).

- Australia ensures that data can flow freely across borders, while respecting privacy and security considerations. It is important to continue facilitating an environment that enables digital trade, through free trade agreements, harmonisation of standards and implementation of trade facilitation measures.
- Despite efforts to improve coordination of government initiatives promoting export capability, innovation and growth, there is still some work to do to increase transparency and to improve the dialogue between the different level of government agencies and transparency. Firms find it difficult to navigate through the different programmes available to them. Also, there is a lack of co-operation between businesses and other actors, such as universities or research institutes. Hence, as recommended in the OECD *Economic Surveys: Australia 2017*, there is a need to develop a more integrated, “whole-of-government” approach to science, research and innovation and consolidate innovation support programmes. This approach could help to reduce the number of support schemes for innovative SMEs and exporters, facilitating the management and efficiency of the different schemes, allowing for more generous programmes while keeping total expenditure constant.
- A review of the R&D Tax Incentive, a program supporting business innovation, found that smaller firms face compliance costs of up to 23% of the of the program benefits. The Government continued efforts, through the recently announced reforms of the R&D TI, to improve the integrity of the program, continue assist smaller companies and refocus support for larger companies undertaking higher intensity R&D, are commendable. However, in line with other recommendations (Ferris et al., 2016), it would be desirable to improve also the administration of the R&D TI program by reducing compliance costs. This would increase companies' accessibility and ensure a more inclusive participation.
- Application processes for government support schemes, such as the Export Market Development Grant (EMDG) are often time consuming and unnecessarily burdensome. Many firms turn to professional consultants for these processes. Application and reporting could be simplified so that firms could reap the full amount of the incentives available.
- The paucity of official statistical trade data, including the lack of Foreign Affiliate Trade Statistics (FATS), complicates the understanding of Australia's strength and weaknesses in services. Improving the statistical base would allow for a more robust analysis of services trade and investment. While efforts in this direction are underway, the timely implementation of an annual survey to collect on a regular basis information on inwards, but also outwards, foreign affiliate sales and a harmonisation of the disaggregation level for the collection of trade statistics and business statistics are essential for an accurate investigation of the benefits of FTAs.

Sector-specific key findings

Air transport services

- Air transport services could benefit from further liberalisation of the international segment, by easing the conditions for foreign airlines to participate in international traffic. The current slot allocation schemes could be further fine-tuned to enhance the level of competitiveness within the sector in existing

airports. In addition, the opening of new airports, such as the Western Sydney Airport, will address capacity constraints in the largest cities.

- Promoting open route schedules and capacity for international flights would ensure greater competition from foreign airlines, with benefits accruing to domestic and international community, including tourists, international students and professional services providers that would enjoy lower airfares and greater travel destination choice. More competition from foreign suppliers and greater access to Australian airports would also contribute to a better integration into GVCs by ensuring that goods travel more easily to and from Australia. An amendment of existing Air Service Agreements or further liberalisation of the aviation sector through new Open Skies agreements could ensure a greater degree of competition.
- The amount of the current Passenger Movement Charge (PMC) could be reassessed so that it only reflects the true cost of the services provided by the government to the air transport sector (such as the cost of customs, immigration and quarantine processing and national aviation security). The introduction of a reduced rate for short-haul flights, as already in place in other countries, could also be considered. The benefits from such reassessment would accrue to international visitors but also to Australian passengers, by reducing airfares. Moreover, smaller charges would enhance the competitiveness of Australian professional services providers by containing their business travel costs.

Logistics

- Logistics services in Australia are affected by a number of administrative procedures related to obtaining licenses/authorisations. A reduction of licencing fees (e.g. for customs brokerage or bonded warehouses), so that they reflect the true cost of the licensing procedure and do not function as a market entry barrier, could ensure more participation and enhance competition in the sector.
- Establishing transparent rules for the recognition of qualifications in customs brokerage would also contribute to increase competitiveness of the logistic sector. Consideration should also be given to streamlining licenses and registration requirements for cargo-handling providers in order to lower entry barriers and ensure more open and competitive markets in ports and airports.

Professional services

- Lack of established procedures for recognition of foreign qualifications, certificates, previous experience and licenses are still widespread around the world. These issues represent major obstacles to the mobility of foreign professionals and their ability to hold equity in local professional services firms. Most of these barriers could be lifted through domestic policy reforms that remove arbitrariness in the revalidation process and recognise foreign qualifications. This could also be pursued through the negotiation of deep and substantive MRAs or by developing best practice principles for recognition of qualifications and licensing and registration requirements agreed on international fora. Local implementation of such agreements would also imply a greater dialogue between the Commonwealth and State and Territory governments. Recognition of qualifications and licenses would ensure greater mobility for Australian professionals and allow Australian businesses to stay agile and competitive by tapping on an international pool of talents. Working with foreign

governments and professional bodies to achieve full accreditation of Australian qualifications would also support Australia's education services exports.

Banking

- Australia's banking sector (especially retail banking) is dominated by four large banks, which are protected from takeovers among each other. Such high levels of concentration may potentially compromise competition and make Australia vulnerable to the risk of banks being "too big to fail". Implicit guarantees for these banks represent competitive advantages over their competitors. Developing a loss absorbing and recapitalisation framework may reduce such implicit guarantees and lead to more equitable competition. The assessment of mergers and acquisitions among these banks should be made by an independent competition authority, considering the stability as well as the efficiency of the financial system.
- The efficiency of the banking system could also be enhanced by widening the scope for foreign offshore banks to actively engage with clients in Australia, which is currently not allowed.

Insurance

- The application process for insurance licenses could be enhanced by a maximum duration for the handling of license applications. Current ARPA Guidelines on Authorisation of General Insurers only state that "applications will be processed within a reasonable time". Introducing an upper limit would reduce uncertainty in the process, sparking entry of young and innovative firms in the sector to the benefit of consumers and downstream businesses.
- While branches of foreign companies established in New Zealand, the United States, Japan, Korea and the People's Republic of China (hereafter "China") are authorised to offer life insurance services in Australia, Part 2b of the Life Insurance Regulations requires that insurance companies from all other countries establish a commercial presence in Australia. Carefully extending this possibility to life insurance companies from a wider range of countries could bring benefits to Australian consumers. In addition, the sector lacks an established process for the recognition of foreign qualifications as actuaries.

Education

- Demand for Australia's on-shore education services might be boosted by efficient and well-managed student visas settings. In that respect, monitoring the effectiveness of the new Simplified Student Visa Framework and improving processing times could deliver long-term benefits. Ongoing review of Student visa policy settings should be sought to ensure student visa services continue to remain internationally competitive.
- Australia's off-shore provision of education services might be limited by barriers to the establishment of wholly foreign-owned campuses, and therefore mandatory partnership requirements with local education providers, and temporary movement of Australian academic and teaching staff abroad. To address some of these barriers, new trade negotiations or amendment of existing agreements could pave the way for greater market access and liberalisation for Australian education providers abroad, particularly in the Asia-Pacific region.

- The recognition of Australian qualifications delivered offshore is another barrier to Australian transnational education. While FTAs can play a role in some circumstances to overcome this barrier, decision-makers could be encouraged to work towards improved recognition arrangements through multilateral fora.

Mining services

- Mining equipment, technology and services (METS) firms should be supported in partnering with technical institutes and universities, including in countries where they have operations. Some increased engagement is already underway through METS Ignited, which could represent a strong force for internationalization of the METS sector.
- Recent FTAs concluded by the Australian Government have been successful in providing access rights to Australian business of METS. For example, technical consulting and field services in coal bed methane and shale gas extraction, as well as mineral resources exploitation, can be provided to China via ChAFTA. Australia should continue its successful economic diplomacy with a focus on mining countries in order to help mining firms to succeed in international markets.

Information and Communications Technology (ICT)

- Firms in the ICT sector require fast and reliable internet connections in order to supply their services to the domestic market and overseas. Currently, many firms suffer from an insufficient broadband connectivity. Upgrade and expansion of Australia's broadband network is essential for these firms in order to obtain higher connection speed, particularly in currently underperforming regions, such as outside of central business districts and in rural areas.
- Moreover, ICT providers could benefit from national award programs as an effective means for the international and national promotion of innovative businesses. A strong commitment from the government, as well as the active participation of multiple stakeholders from the private sector is required in order to raise the visibility of such awards.

Tourism

- More coordination among the Federal Government, individual states and territories and industry associations would be desirable in creating more effective marketing strategies to better sell Australia attractiveness as a tourism destination.
- A streamlining of the visa application procedures could enhance the competitiveness of the sector. Moreover, in line with the objectives of the Tourism 2020 national strategy, there is a need for developing skilled tourism workforce and for further investment in private and public tourism-related infrastructure and facilities (particularly in regional areas), including accommodation, local attractions and transport (airports, roads, ports).

Annex A. Data

Input-output data

The input-output analysis describes the sale and purchase relationships between producers and consumers within an economy. One key component of input-output data is the intermediate transaction table that records the sales and purchases of intermediate inputs between different sectors of the economy. The intermediate transaction table allows tracing the various inputs that flow into the supply chains (or value chains) of an economy. For instance, how much financial services are purchased by the mining industry, which in turn supplies ores to manufacturing companies.

The input-output data described in Part 1 are compiled by the Australian Bureau of Statistics as part of their national accounts. The most recent compilation for the fiscal year 2014-15, which includes data for 114 industries, is used for the purpose of the analysis included in such section.¹ The ABS defines services-producing industries “as industries other than goods-producing industries”, excluding Agriculture, Forestry and Fishing; Mining; Manufacturing and Construction. The latter differ from the convention used by the OECD that classifies Construction as a services sector. To facilitate international comparisons of trade statistics, the OECD convention is adopted in the remaining of the analysis.² The input-output tables identifies 50 service headings (4-digit codes), including construction services, divided into 15 divisions reported in Table A.1. As highlighted in Table A.1, there is a slight difference in sector codes used in Australia New Zealand Standard Industrial Classification (ANZSIC) 2006 and ISIC, Rev 3.1.

Data and analytical results reported in the main text refer to the main services divisions. Results at the 4-digit headings levels are available in Annex C.

Gross output (production) and gross export shares can be extrapolated directly from the input-output tables. Gross output is a measure of an industry's sales or receipts, which include sales to final users in the economy and to other industries as intermediate inputs.³ Gross export is the gross value of the export sales.⁴ The value added produced by each industry is calculated either as (i) the gross output minus the costs of intermediate inputs, or as (ii) the compensation to the primary production factors employed by the industry (capital and labour). In other words, measures in value added terms express the value created by the industry by processing inputs into more valuable outputs, where the difference is used to compensate the employees and the owners of the firms that provide capital and carry risks. The contribution to GDP is measured by the value added net of taxes and subsidies. The total export of value added of a sector is calculate as the sum of the direct value added export of the sector and the value added that is transmitted through the supply chains of the economy to other industries that export to the world market.

The direct export of value added can be derived from input-output tables by multiplying the value added coefficient, i.e. value added divided by gross output, by the gross exports of the sector. The indirect export of value added requires a more advanced calculation that traces the value added flows between all sectors of the economy to the final export point (see

Annex B for technical details). The export propensity of each sector, both in gross and value added terms, is defined as the shares of output and value added, respectively, that are exported (Table C.3).

Table A.1. Input-Output sector definition and classifications

Sector	ANZSIC, 2006	3.1
Goods		
Agriculture, Forestry and Fishing	A	A
Mining	B	B
Manufacturing	C	C
Services		
Electricity, Gas, Water and Waste Services	D	D-E
Construction	E	F
Wholesale Trade and Retail	F-G	G
Accommodation and Food Services	H	I
Transport, Postal and Warehousing	I	H
Information and Communication	J	J
Financial and Insurance Services	K	K
Real Estate Activities	L	L
Professional, Scientific and Technical Activities	M	M
Administrative and Support Services Activities	N	N
Public administration and defence; comp. social security	O	O
Education	P	P
Human health and social work activities	Q	Q
Arts and Recreation Services	R	R
Other Services	S	S

Shift-share analysis

Shift-Share Analysis is quite demanding on data. The first constraint is the sector and geographical breakdown of Australia's own trade statistics. Exports statistics for narrowly defined service categories is not broken down by partner country. Bilateral trade statistics by sector and market only exist for the main divisions in EBOPS 2010.⁵ What is more, bilateral data is only reported for 34 trading partners. The second data constraint is the availability of matching trade statistics from other countries. Many countries are lagging behind in the migration from EBOPS 2002 (IMF BPM 5) to EBOPS 2010 (IMF BPM 6). And when data exists in EBOPS 2010, the time series usually starts first 2010.

The most appropriate solution to this problem is to match Australia's export statistics with the import statistics of its trading partners at the main division of EBOPS 2010. The latter data does not have to be broken down geographically; total imports from the world are sufficient to calculate the benchmark indicators. This match is possible for 31 of the 34 partner countries that are identified in Australia's trade statistics, the missing countries being Brunei Darussalam, Chinese Taipei and Viet Nam. The analysis covers eleven services sectors: The included services are (SC) Transport, (SDA) Business Travel, (SDB2) Educational-related personal travel, (SDB, other) Other Personal Travel, (SE) Construction, (SF) Insurance and pension services, (SG) Financial services, (SH) Charges for the use of intellectual property n.i.e., (SI) Telecommunications, computer, and information services, (SJ) Other business services, and (SK) Personal, cultural, and recreational services.

Three sectors have to be dropped because of insufficient geographic breakdown of the data either for Australia and/or the partner countries (manufacturing services on physical inputs

owned by others, maintenance and repair services n.i.e., government services). Global imports of travel services divided between (a) Business travel, (b) educational-related personal travel and (c) other personal travel (tourism and health-related travel) are only available for 21 out of 31 countries. When missing, these categories are estimated using the reported export share of EU28 to the non-reporting countries (multiplied with the reported total imports of travel service).

The data included in the shift-share analysis represents about 78% of Australia's export in 2014. The time period for the shift-share analysis is relatively short, covering the four-year period 2010 to 2014 (to be extended to 2015 when data permits).

Firm-level data analysis

Firm-level data on services trade and investment are drawn from the Survey of International Trade in Services (SITS) and from the Survey of International Investment (SII), along with numerous administrative and modelled data, carried out by the Australian Bureau of Statistics (ABS) for the compilation of the Australian Balance of Payments statistics and the Australian International Investment Position.

SITS is a statutory survey conducted on a quarterly basis, and addressed to Australian resident enterprises, that engage in (or are likely to in the near future) services traded internationally. Firms engaged in international services transactions are identified through the International Trade in Services Coverage Survey, and subsequently allocated a SITS object classification for form type and stratification purposes. The types of traded services reported are defined according to an Australian internal services trade classification, somewhat equivalent to the Extended Balance of Payments Services (EBOPS, 2010), from which it is possible to match thirteen STRI sectors.⁶ The sample selected for the micro-data analysis comprises about 1 747 exporting firms over a period of three years, from 2014 to 2016.

Data on foreign investment are based on information provided by Australian corporations and Australian branches of foreign corporations about their financial claims and liabilities to non-residents. An Australian enterprise group consists of an Australian parent enterprise (the top Australian enterprise), its Australian branches and its Australian subsidiaries as defined by the Corporations Law. The survey form is completed by the top Australian enterprise for a single institutional sub-sector.

The ABS considers as foreign direct investment in Australia, non-residents direct investors that hold 10% or more of the ordinary shares or voting stock of any Australian enterprise. Similarly, Australian direct investment abroad includes investments overseas by Australian entities (individuals or businesses) that hold 10% or more ownership in a foreign business.⁷ The target population of the survey is comprised of all Australian enterprise groups that have foreign investment based on information available on the Business Register managed within the ABS. FDI data are classified by Industry according to the principal activity of the Australian parent or the Australian subsidiary, following the ANZSIC, 2006, 1292.0. From this industry classification, eleven STRI sectors are matched (as reported in Table A.2), for a total of 117 Australian parent companies with control in overseas affiliated companies present in 1 129 countries, over the period 2012-2016.

Table A.2. Correspondence between STRI sectors and national classifications

STRI sectors	Foreign direct investment data	
	ANZIC 2006	
Audio-visual services (AS)	5511, 5512, 5513, 5610, 5621, 5700	
Commercial Banking (FSbnk)	6221, 6223, 6229, 6230	
Computer (CS)	5910, 7000	
Construction (CO)	3011, 3019, 3020, 3101, 3109, 3211, 3224, 3232, 3234, 3239	
Distribution (DS)	3312, 3319, 3321, 3322, 3323, 3339, 3411, 3419, 3491, 3492, 3493, 3494, 3499, 3601, 3606, 3609, 3712, 3720, 3731, 3736, 3739, 3921, 3922, 4110, 4211, 4221, 4222, 4251, 4259, 4260	
Engineering (PSeng)	6923	
Insurance (FSins)	6310, 6321, 6322, 6411, 6419	
Legal (PSleg)	6931	
Logistics (LS)	5292, 5299, 5301, 5309	
Telecommunications (TC)	5801, 5802	
Transport (TR)	4610, 4710, 4810, 4900, 5211, 5212, 5219	

Notes

1. A fiscal year (or financial year) is the period used by governments for accounting and budget purposes, which in Australia runs from 1 July to 30 June the following year.
2. This inevitably means that some aggregate statistics published in this paper will deviate from ABS statistics on the same subject.
3. Australian IO-tables distinguish seven categories of final uses: Final Consumption Expenditure, divided between (Q1) Households and (Q2) Government; Gross Fixed Capital Formation, divided between (Q3) Private, (Q4) Public Enterprise and (Q5) General Government; (Q6) Changes in Inventories; and (Q7) Exports.
4. The services export component of the input-output analysis is based on data sourced from the Balance of Payments, which covers all modes of supply except commercial presence abroad.
5. A notable exception are travel services (the largest category), which are broken down into business and personal travel divided further into educational-related and other personal travel (tourism and health-related travel).
6. The STRI sectors matched are: audio-visual services (motion pictures and sound recording); construction; commercial banking; computer services; professional services (accounting/auditing, architecture, engineering, legal services); telecommunication; postal and courier services; air and maritime transport.
7. Direct investment can take the form of *branches*, if fully owned by the direct investor; *subsidiaries*, if at least 50% is owned by the direct investor; and *associated companies*, if between 10% and 50% of ownership is in the hand of the direct investor.

Annex B. Methodology

Input-output analysis

This annex provides a brief introduction to input-output analysis, including the formulas used to calculate the indicators reported in this study.

One-country closed economy

A stylized IO-table of a closed economy is depicted in Table B.1. The first $n \times n$ elements of the IO-table record intra- and inter-industry flows of intermediate goods and services, where sales from sector i to j are recorded horizontally and purchases vertically. The $n+1$ column (“Final demand”) records sales to final consumers and the $n+1$ row (“Value added”) outlays on labour and capital that process raw materials and manufactured inputs into more valuable outputs. The shaded column to the right reports total output (supply) by industry and the shaded column at the bottom total input (use) by industry, which in equilibrium are equal in monetary terms.

Table B.1. Input-output table of a closed economy

Using sector $j = 1, 2, \dots, n$

	Intermediate demand			Final demand	Total output
	Sector 1	Sector 2	Sector n		
Sector 1	z_{11}	z_{12}	z_{1n}	f_1	y_1
Sector 2	z_{21}	z_{22}	z_{2n}	f_2	y_2
...	...	...	...	...	...
Sector n	z_{n1}	z_{n2}	z_{nn}	f_n	y_n
Value Added	w_1	w_2	w_n	GDP	
Total input	y_1	y_2	y_n		

Supplying sector $i = 1, 2, \dots, n$

To analyse the interaction between sectors, Leontief (1936) – the intellectual father of IO-analysis – proposed a linear model with fixed input coefficients and constant returns to scale (CRS). The production functions were specified as,

$$(1) \quad y_j = \min \left(\frac{z_{1j}}{a_{1j}}, \frac{z_{2j}}{a_{2j}}, \dots, \frac{z_{nj}}{a_{nj}}, \frac{w_j}{b_j} \right),$$

where y_j denotes the output of sector j , z_{ij} inputs from sector i and w_j inputs of primary production factors. The a_{ij} coefficients in the denominator specify the *minimum input requirements* from sector i to produce one unit of output in sector j . Since there is no substitutability between different types of inputs, firms will employ just the minimum amount of inputs to produce the output demanded by the market,

$$(2) \quad z_{ij} = a_{ij}y_j.$$

The last term in the production function is the input of primary production factors w_j (value added) which enter with coefficient b_j (which in equilibrium equals $1 - \sum a_{ij}$ under the CRS assumption). This part of the model is not well developed: it is just assumed that there is enough primary factors to supply all sectors of the economy (either because of elastic supply or flexible factor prices). The model is closed by treating final demand as an exogenous “variable”.

Under these assumptions, the model boils down to a linear equation system of supply and demand,

$$\underbrace{\begin{bmatrix} y_1 \\ y_2 \\ \vdots \\ y_n \end{bmatrix}}_{\mathbf{y}} = \underbrace{\begin{bmatrix} a_{11} & a_{12} & \cdots & a_{1n} \\ a_{21} & a_{22} & \cdots & a_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ a_{n1} & a_{n2} & \cdots & a_{nn} \end{bmatrix}}_{\mathbf{A}} \underbrace{\begin{bmatrix} y_1 \\ y_2 \\ \vdots \\ y_n \end{bmatrix}}_{\mathbf{y}} + \underbrace{\begin{bmatrix} f_1 \\ f_2 \\ \vdots \\ f_n \end{bmatrix}}_{\mathbf{f}}.$$

where $\mathbf{y}$ denotes the production vector, $\mathbf{A}$ the input-output matrix per unit of output and $\mathbf{f}$ the final demand vector, and where the product of $\mathbf{A}$ and $\mathbf{y}$ gives the intermediate demands for inputs. The solution to this equation system (the general equilibrium of the economy) is,

$$(3) \quad \mathbf{y} = [\mathbf{I} - \mathbf{A}]^{-1}\mathbf{f},$$

where $[\mathbf{I} - \mathbf{A}]^{-1}$ is the “Leontief inverse” that computes the total input requirements from each sector to produce the exogenous vector of final demand.¹

One country open economy model

Let us now introduce exports and imports into the model. Let’s assume that we have data on the total export by sector ($\mathbf{x}$) whilst the import vector ($\mathbf{m}$) is further divided into intermediate and final goods. The demand from the world market is treated as an exogenous variable just as domestic final demand, whereas the demand for intermediate imported goods and services depends on the domestic production. The open economy model is described by two blocks of linear equations

$$(4a) \quad \mathbf{y} = \mathbf{A}^D \mathbf{y} + \mathbf{f}^D + \mathbf{x},$$

$$(4b) \quad \mathbf{m} = \mathbf{A}^M \mathbf{y} + \mathbf{f}^M,$$

where the first block is the supply-equals-demand conditions for domestic goods (superscript $\mathbf{D}$) and the second block supply-equals-demand conditions for imported goods (superscript $\mathbf{M}$). The solution to this block-recursive equation system is:

$$(5a) \quad \mathbf{y} = [\mathbf{I} - \mathbf{A}^D]^{-1}(\mathbf{f}^D + \mathbf{x}),$$

$$(5b) \quad \mathbf{m} = \mathbf{A}^M[\mathbf{I} - \mathbf{A}^D]^{-1}(\mathbf{f}^D + \mathbf{x}) + \mathbf{f}^M.$$

Note that the open economy version of the Leontief model establishes a direct link between exports and imports flowing from the dual assumptions of fixed input coefficients and no substitutability between domestic and imported inputs.

The marginal impact of an external increase in exports ($d\mathbf{x}$) on the domestic production ($d\mathbf{y}$) and on the derived imports of intermediate products ($d\mathbf{m}$) is calculating by differentiating (5a) and (5b) with respect to $\mathbf{x}$:

$$(6a) \quad dy = [I - A^D]^{-1} dx,$$

$$(6b) \quad dm = A^M [I - A^D]^{-1} dx.$$

How much domestic value added does the export vector x contains? The *direct* export of value-added of the exporting sector equals: $v \cdot X$, where v is the vector of value-added coefficient and $\cdot$ the element-by-element operator (the Hadamard product). Firms may also export value-added *indirectly* by supplying inputs to other domestic firms that export. The indirect export of this value-added equals $v \cdot A^D X$. The forward supply chain may also go through two stages of domestic processing before export. The value added export of these sub-parts and sub-components is $v \cdot (A^D)^2 X$. Continuing the forward iteration to account for evermore indirect supply linkages to domestic firms that export, we get a geometric matrix series that converges to the following vector that tell us how much domestic value added each export product contains:

$$(7a) \quad \vec{v}^x = v \cdot \{[I - A^D]^{-1} x\}.$$

The arrow in $\vec{v}^x$ indicates that we have calculated the value added content of the vector by following the supply chains forward from each sector to the final point of exports. If we sum all elements of (7) we get the total value added content of the export vector of Australia, and if we sum all services sectors the value added exports of the services sector. We can also calculate how much of the value added that is exported by different sectors of the economy by substituting $diag(x)$ for x in (7a),

$$(7b) \quad \vec{V}^x = v \cdot \{[I - A^D]^{-1} diag(x)\},$$

where $diag(x)$ is a diagonal matrix of the export vector (exports on the diagonal elements and zeros on the off-diagonal elements), which in turn can be aggregated into the main sectors of the economy as in the main text (A, B, C, D-S).

The domestic input requirements by sector (the embodied domestic value added) is calculated by following the supply chains upstream instead of downstream as in the previous example,

$$(8a) \quad \vec{V}^D = [I - A^{D'}]^{-1} \cdot v,$$

where $A^{D'}$ is the transpose of the A^D . The imported value added by each sector is calculated as

$$(8b) \quad \vec{V}^M = [I - A^{D'}]^{-1} A^{M'},$$

where $A^{M'}$ is the transpose of A^M .

Extending the Leontief model into an inter-country input-output model (ICIO) is straightforward. The starting point is the realisation that the world as a whole is a closed economy and hence can be modelled in the same way as a closed single country model. We formulate the ICIO-model in block matrix notation in order to distinguish between domestic and international transactions.

The OECD-WTO TiVA database used for this exercise is organized in three matrices,

$$(9) \quad y = \underbrace{\begin{bmatrix} y_1 \\ y_2 \\ \vdots \\ y_m \end{bmatrix}}_{mn \times 1}, \quad A = \underbrace{\begin{bmatrix} A_{11} & A_{12} & \cdots & A_{1m} \\ A_{21} & A_{22} & \cdots & A_{2m} \\ \vdots & \vdots & \ddots & \vdots \\ A_{m1} & A_{m2} & \cdots & A_{mm} \end{bmatrix}}_{mn \times mn}, \quad F = \underbrace{\begin{bmatrix} f_{11} & f_{12} & \cdots & f_{1m} \\ f_{21} & f_{22} & \cdots & f_{2m} \\ \vdots & \vdots & \ddots & \vdots \\ f_{m1} & f_{m2} & \cdots & f_{mm} \end{bmatrix}}_{mn \times m},$$

where $\mathbf{y}$ is the global production vector ($\mathbf{y}_j$ is the output vector of country $j = \{1, 2, \dots, m\}$), $\mathbf{A}$ is the intermediate consumption matrix with domestic IO-links on the diagonal blocs ($\mathbf{A}_{jj}$) and international IO-links on the off-diagonal blocks ($\mathbf{A}_{jk}$), and where $\mathbf{F}$ is the final demand matrix by destination markets. In general equilibrium supply must equal demand in all sectors and countries, taking into account the intermediate consumption used in all production activities:

$$\begin{aligned} (10) \quad \mathbf{y} &= \mathbf{A}\mathbf{y} + \sum_j \mathbf{F}_j \\ &= \underbrace{\mathbf{A}[\mathbf{I} - \mathbf{A}]^{-1}(\sum_j \mathbf{F}_j)}_{\text{intermediate}} + \underbrace{(\sum_j \mathbf{F}_j)}_{\text{final}} \\ &= [\mathbf{I} - \mathbf{A}]^{-1}(\sum_j \mathbf{F}_j), \end{aligned}$$

where $j=\{1, 2, \dots, m\}$ is a country index and $\sum_j \mathbf{F}$ the global demand vector (formed by summing the final demand vector over all countries). The export matrix divided between intermediate exports and exports of final products is given by

$$\begin{aligned} (11) \quad \mathbf{x} &= \mathbf{A}^x \mathbf{y} + (\sum_j \mathbf{F}_j^x) \\ &= \underbrace{\mathbf{A}^x [\mathbf{I} - \mathbf{A}]^{-1} (\sum_j \mathbf{F}_j)}_{\text{intermediate}} + \underbrace{(\sum_j \mathbf{F}_j^x)}_{\text{final}}, \end{aligned}$$

where $\mathbf{A}^x$ is the export part of the $\mathbf{A}$ -matrix (zeros on the block diagonal) and $\mathbf{F}^x$ the export part of the $\mathbf{F}$ -matrix (zeros on the block diagonal). As in the single country model, the domestic value added content (ignoring returning value added after a production step abroad) is found by following the domestic value chain forward from every sector to the final point of exports,

$$(12) \quad \vec{\mathbf{v}}^x = \mathbf{v} \cdot \{[\mathbf{I} - \mathbf{A}^D]^{-1} \mathbf{x}\},$$

where $\mathbf{A}^D$ consists of the domestic blocks of the $\mathbf{A}$ -matrix with the zeros on the off-diagonal blocks.

By differentiating (9) and (10) with respect to the final demand vectors we can calculate the induced changes in the production and exports of Australia when the demand conditions changes abroad, where particular interest is paid in the main text to demand shifts in Asia and Oceania.

$$(13) \quad d\mathbf{y} = \underbrace{\mathbf{A}[\mathbf{I} - \mathbf{A}]^{-1} \sum_j d\mathbf{F}_j}_{\text{intermediate}} + \underbrace{\sum_j d\mathbf{F}_j}_{\text{final}},$$

$$(14) \quad d\mathbf{x} = \underbrace{\mathbf{A}^x d\mathbf{y}}_{\text{intermediate}} + \underbrace{(\sum_j d\mathbf{F}_j^x)}_{\text{final}},$$

$$(15) \quad d\vec{\mathbf{v}}^x = \mathbf{v} \cdot \{[\mathbf{I} - \mathbf{A}^D]^{-1} d\mathbf{x}\}.$$

Measuring and decomposing productivity at the industry and national level

This annex provides an introduction to the growth accounting methodology in the EU KLEMS manual (Timmer et al, 2007), which grew out of a research project on the productivity slowdown in the European Union funded by the European Commission in 2003-2008. Many other countries have now adopted this manual in their productivity

research, including Australia. KLEMS stands for the five categories of inputs that are measured – Capital (K), Labour (L), Energy (E), Materials (M) and Services (S) – alongside the outputs of each sector in order to assess the residual growth in productivity, i.e. growth in output above and beyond the growth in inputs. The KLEMS manual is based on research of Jorgensen and Griliches (1967), Jorgenson, Gollop and Fraumeni (1987), OECD (2001), Jorgenson, Ho and Stiroh (2005) amongst others. A full account of the KLEMS methodology with applications to the European Union and the United States can be found in Timmer et al. (2010) and Jorgenson et al (2005).

Growth accounting at the industry level

Let $j = 1, 2, \dots, N_j$ index industries in the KLEMS database. The volume index of output of industry j in year t is denoted Y_{jt} . The inputs of production are divided into five volume indices calculated from the national accounts and other statistical sources:

- K_{jt} is a volume index of capital services constructed from 11 classes of capital assets;
- L_{jt} is a volume index of labour services constructed from 18 classes of labour inputs distinguished by gender, educational achievement and age group.
- E_{jt}, M_{jt}, S_{jt} are volume indices of Energy (E_{jt}), Materials (M_{jt}) and Services (S_{jt}) constructed from the use-table of the input-output accounts.

The maximum volume of output that can be produced with the available inputs is called the “production possibility frontier” and is captured by a function f_{jt}

$$(1) \quad Y_{jt} = f_{jt}(K_{jt}, L_{jt}, E_{jt}, M_{jt}, S_{jt}, A_{jt}^Y),$$

where A_{jt}^Y is a productivity index. Under the assumption of constant returns to scale and competitive markets for outputs (Y_{jt}), intermediate inputs (E_{jt}, M_{jt}, S_{jt}) and primary production factors (K_{jt}, L_{jt}), the value of output is equal to the value of the inputs,

$$(2) \quad P_{jt}^Y Y_{jt} = P_{jt}^K K_{jt} + P_{jt}^L L_{jt} + P_{jt}^E E_{jt} + P_{jt}^M M_{jt} + P_{jt}^S S_{jt},$$

where $P_{jt}^Y, P_{jt}^K, P_{jt}^L, P_{jt}^E, P_{jt}^M, P_{jt}^S$ denotes the corresponding price index to each volume index. Using a translog parameterization of f_{jt} we can define productivity growth (A_{jt}^Y) as a Törnqvist (1936) index,

$$(3) \quad \Delta \ln A_{jt}^Y \equiv \Delta \ln Y_{jt} - \sum_Z \bar{v}_{jt}^{ZY} \Delta \ln Z_{jt}, \quad Z \in \{K, L, E, M, S\},$$

where $\Delta \ln Y_{jt} \equiv \ln Y_{jt} - \ln Y_{jt-1}$ is the logarithmic volume growth of output from $t-1$ to t , $\Delta \ln Z_{jt} \equiv \ln Z_{jt} - \ln Z_{jt-1}$ the logarithmic volume growth of input Z_{jt} , and $\bar{v}_{jt}^{ZY} = 0.5 \left(\frac{P_{jt}^Z Z_{jt}}{P_{jt}^Y Y_{jt}} + \frac{P_{jt-1}^Z Z_{jt-1}}{P_{jt-1}^Y Y_{jt-1}} \right)$ the average cost share of input Z_{jt} in the output of Y_{jt} . The assumption of constant returns to scale implies that the input shares of $K_{jt}, L_{jt}, E_{jt}, M_{jt}$ and S_{jt} sum to one ($\sum_Z \bar{v}_{jt}^{ZY} = 1$). Under this assumption we can use the observed cost shares of the measured inputs in the estimation of the residual productivity growth, i.e. the volume growth of output above and beyond the volume growth of inputs. The residual term

is referred to as multi-factor productivity (MFP) in the EU KLEMS manual, also known as total factor productivity. MFP is usually interpreted as “disembodied” technological change that allows more output to be produced with given inputs. It is “disembodied” in the sense that it cannot be linked to any particular input. Technological change may also be “embodied” in, for instance, new generations of computers with faster processors and larger memories to store data. The latter should be captured in the measurement of capital services, but measurement errors cannot be ruled out in practice. See further Chapter 3.6 in Timmer et al (2010).

Rearranging (3) yields the standard growth accounting formula that decomposes the volume growth of output into the contributions of different categories of inputs and the residual MFP growth:

$$(4) \quad \underbrace{\Delta \ln Y_{jt}}_{\text{volume growth of output}} = \underbrace{\bar{v}_{jt}^{KY} \Delta \ln K_{jt}}_{\text{contribution of capital services}} + \underbrace{\bar{v}_{jt}^{LY} \Delta \ln L_{jt}}_{\text{contribution of labor services}} + \underbrace{\bar{v}_{jt}^{XY} \Delta \ln X_{jt}}_{\text{contribution of int. inputs}} + \underbrace{\Delta \ln A_{jt}^Y}_{\text{contribution of MFP growth}},$$

where the volume index of intermediate inputs can be decomposed into energy, materials and services inputs: $\bar{v}_{jt}^{XY} \Delta \ln X_{jt} = \bar{v}_{jt}^{EY} \Delta \ln E_{jt} + \bar{v}_{jt}^{MY} \Delta \ln M_{jt} + \bar{v}_{jt}^{SY} \Delta \ln S_{jt}$.

From a policy perspective it may be equally relevant to decompose the growth of *value added* as the growth of output since the value added determines the compensation to the primary factors. Indeed, assuming that wages and capital returns are equal to the marginal productivity in monetary terms, the compensation to the primary factors sum to the value added of the industry: $V_{jt} = P_{jt}^K K_{jt} + P_{jt}^L L_{jt}$. The decomposition formula for the volume growth of value added takes the following form,

$$(5) \quad \underbrace{\Delta \ln V_{jt}}_{\text{volume growth of value added}} = \underbrace{\bar{v}_{jt}^{KV} \Delta \ln K_{jt}}_{\text{contribution of capital services}} + \underbrace{\bar{v}_{jt}^{LV} \Delta \ln L_{jt}}_{\text{contribution of labor services}} + \underbrace{\Delta \ln A_{jt}^V}_{\text{contribution of MFP growth}}$$

where $\bar{v}_{jt}^{KV} = \bar{v}_{jt}^{KY} / \bar{v}_{jt}^{VY}$ and $\bar{v}_{jt}^{LV} = \bar{v}_{jt}^{LY} / \bar{v}_{jt}^{VY}$ are the average share of capital and labour in value added, and $\bar{v}_{jt}^{VY} = 0.5 \left(\frac{V_{jt}}{P_{jt}^Y Y_{jt}} + \frac{V_{jt-1}}{P_{jt-1}^Y Y_{jt-1}} \right)$ the average share of value added in gross output, and $\Delta \ln A_{jt}^V = \frac{1}{\bar{v}_{jt}^V} \Delta \ln A_{jt}^Y$ the MFP growth in value added terms that is proportional to the MFP growth in gross output.

Aggregation

Industry accounts can be aggregated into broader sectors of the economy such as primary products, manufacturing, services and the total economy. The KLEMS manual use the direct aggregation approach of Jorgenson, Gollop and Fraumeni (1987),

$$(6) \quad \Delta \ln Y_t = \sum_{j \in \Omega} \bar{w}_{jt}^Y \Delta \ln Y_{jt},$$

where $\bar{w}_{jt}^Y = 0.5 \left(\frac{P_{jt}^Y Y_{jt}}{\sum_{j \in \Omega} P_{jt}^Y Y_{jt}} + \frac{P_{jt-1}^Y Y_{jt-1}}{\sum_{j \in \Omega} P_{jt-1}^Y Y_{jt-1}} \right)$ is the average two-period share of industry j in the aggregate revenue of all industries in set Ω , and where $\Delta \ln Y_{jt}$ are substituted from equation (4). Ω can include any combination of industries that are of interest to aggregate for analytical or presentational reasons, for example all services sectors. Similarly, the aggregation of value added is done with the formula

$$(7) \quad \Delta \ln V_t = \sum_{j \in \Omega} \bar{w}_{jt}^V \Delta \ln V_{jt},$$

where $\bar{w}_{jt}^V = 0.5 \left(\frac{V_{jt}}{\sum_{j \in \Omega} V_{jt}} + \frac{V_{jt-1}}{\sum_{j \in \Omega} V_{jt-1}} \right)$ is the average two-period share of industry j in the aggregate value added of all industries in set Ω , and where $\Delta \ln V_{jt}$ are substituted from equation (5). If Ω include all sectors in the economy, equation (7) decomposes the growth in the gross domestic product (GDP).

Labour inputs

The KLEMS manual defines 18 classes of labour inputs distinguished by gender (male/female), educational achievement (middle school or below, high school, college or above) and age group as a proxy for work experience (15-29, 30-49, and 50+).

Table B.2. Classification of labour inputs

Gender	Education	Age group
Male	Middle school or below (low)	15-29
Female	High school (medium)	30-49
	College or above (high)	50+

The volume index of labour services is constructed by weighing 18 classes of labour inputs formed from the combinations of gender, educational achievements and age group

$$(8) \quad \Delta \ln L_{jt} = \sum_l \bar{v}_{jt}^l \Delta \ln H_{jt}^l,$$

where H_{jt}^l is the number of hours worked by labour class l and $\bar{v}_{jt}^l = 0.5 \left(\frac{P_{jt}^l H_{jt}^l}{P_{jt}^l L_{jt}} + \frac{P_{jt-1}^l H_{jt-1}^l}{P_{jt-1}^l L_{jt-1}} \right)$ the average share of l in the labour compensation of industry j in period t and $t-1$. The volume index of labour service can be decomposed into total hours worked and changes in the composition of the labour inputs,

$$(9) \quad \Delta \ln L_{jt} = \sum_l \bar{v}_{jt}^l \Delta \ln \left(\frac{H_{jt}^l}{H_{jt}} \right) + \Delta \ln H_{jt} = \Delta \ln LC_{jt} + \Delta \ln H_{jt},$$

where $H_{jt} = \sum_l H_{jt}^l$ is the total numbers of hours worked by all labour classes, and where $\Delta \ln LC_{jt}$ stands for changes in labour composition. Another useful decomposition is between the three educational classes listed in Table B.1. For example, the low educational group (middle school or below) is constructed by weighing together the hours worked by (low, male, 15-29), (low, male, 30-49), (low, male, 50+), (low, female, 15-29), (low, female, 30-49) and (low, female, 50+), where the weights are given by the two-period average share of each sub-group in the labour compensation of the low educated group:

$$(10) \quad \Delta \ln L_{jt}^e = \sum_{l \in e} \bar{v}_{jt}^l \Delta \ln H_{jt}^l, \quad e = \{low, medium, high\}.$$

Capital inputs

The KIP database defines 11 classes of capital assets listed in Table B.3, of which three are classified as Information and Communication Technology (ICT). The estimation of capital assets by industries is done with a modified perpetual inventory method.

The volume index of capital services is constructed by weighing the 11 classes of capital inputs

$$(11) \quad \Delta \ln K_{jt} = \sum_k \bar{v}_{jt}^k \Delta \ln K_{jt}^k,$$

where $\bar{v}_{jt}^k = 0.5 \left(\frac{P_{jt}^k K_{jt}^k}{P_{jt}^K K_{jt}^K} + \frac{P_{jt-1}^k K_{jt-1}^k}{P_{jt-1}^K K_{jt-1}^K} \right)$ is the average share of asset k in the capital compensation of industry j in period t and $t-1$. Capital services are in turn decomposed into ICT and non-ICT assets,

$$(12) \quad \Delta \ln K_{jt}^Z = \sum_{k \in Z} \bar{v}_{jt}^k \Delta \ln K_{jt}^k, \quad Z = \{ICT, NICT\}.$$

Table B.3. Classification of capital inputs

Number	Asset	ICT
1	Residential structures	
2	Non-residential structures	
3	Infrastructure	
4	Transport equipment	
5	Computing equipment	x
6	Communications equipment	x
7	Other machinery and equipment	
8	Products of agriculture and forestry	
9	Other products	
10	Software	x
11	Other intangibles	

Sources of labour productivity growth

A common measure of labour productivity is value added per hour. If we combine (5) and (9) and subtract both sides with $\Delta \ln H_{jt}$ we get a growth accounting formula for labour productivity:

$$(13) \quad \underbrace{\Delta \ln V_{jt} - \Delta \ln H_{jt}}_{\text{change in labor productivity}} = \underbrace{\bar{v}_{jt}^{KV} [\Delta \ln K_{jt} - \Delta \ln H_{jt}]}_{\text{contribution of capital deepening}} + \underbrace{\bar{v}_{jt}^{LV} \Delta \ln LC_{jt}}_{\text{contribution of changes in the labor composition}} + \underbrace{\Delta \ln A_{jt}^V}_{\text{contribution of MFP growth}}.$$

Following Inklaar, Timmer and van Ark (2008), the capital deepening is divided into information and communication technologies (ICT) and other (NICT) assets.

$$(14) \quad \Delta \ln K_{jt} = \bar{v}_{jt}^{ICT} \Delta \ln K_{jt}^{ICT} + \bar{v}_{jt}^{NICT} \Delta \ln K_{jt}^{NICT},$$

where $\bar{v}_{jt}^{ICT}$ and $\bar{v}_{jt}^{NICT}$ are the average shares of ICT and non-ICT assets in the capital compensation of industry j in period t and $t-1$. Substituting (14) into (13), yields the following growth accounting formula for labour productivity

$$(15) \quad \underbrace{\Delta \ln \left(\frac{V_{jt}}{H_{jt}} \right)}_{\text{change in labor productivity}} = \underbrace{\bar{v}_{jt}^{KICTV} \Delta \ln \left(\frac{K_{jt}^{ICT}}{H_{jt}} \right)}_{\text{contribution of capital deepening of ICT assets}} + \underbrace{\bar{v}_{jt}^{KNICTV} \Delta \ln \left(\frac{K_{jt}^{NICT}}{H_{jt}} \right)}_{\text{contribution of capital deepening of non-ICT assets}} + \underbrace{\bar{v}_{jt}^{LV} \Delta \ln LC_{jt}}_{\text{contribution of changes in the labor composition}} + \underbrace{\Delta \ln A_{jt}^V}_{\text{contribution of MFP growth}},$$

where $\bar{v}_{jt}^{KICTV} = \bar{v}_{jt}^{KV} \bar{v}_{jt}^{ICT}$ and $\bar{v}_{jt}^{KNICTV} = \bar{v}_{jt}^{KV} \bar{v}_{jt}^{NICT}$ are the value added share of ICT and non-ICT assets.

Notes

1. As shown by Miller and Blair (2009, p. 33), provided that $a_{ij} \geq 0$ for all i and j and $\sum_{i=1}^n a_{ij} < 1$ for all j , the Leontief inverse is the solution to an infinite geometric series of $\mathbf{A}$,

$$[\mathbf{I} - \mathbf{A}]^{-1} = \mathbf{I} + \mathbf{A} + \mathbf{A}^2 + \mathbf{A}^3 + \dots,$$

which is the analogue to a geometric series in standard algebra: $[1 - a]^{-1} = 1 + a + a^2 + a^3 + \dots$ for $|a| < 1$. The reason why increasingly higher powers of $\mathbf{A}$ enter the market clearing condition,

$$\mathbf{y} = [\mathbf{I} - \mathbf{A}]^{-1} \mathbf{f} = \mathbf{f} + \mathbf{A}\mathbf{f} + \mathbf{A}^2\mathbf{f} + \mathbf{A}^3\mathbf{f} + \dots = \underbrace{\mathbf{A}[\mathbf{I} - \mathbf{A}]^{-1} \mathbf{f}}_{\text{intermediate consumption}} + \underbrace{\mathbf{f}}_{\text{final consumption}}$$

is that the suppliers of inputs use inputs themselves, which in turn are produced with yet other inputs all the way back to the initial production stage. In equilibrium, the production of each industry must satisfy both the final demand $\mathbf{f}$ and the intermediate needs of all sectors in the economy $\mathbf{A}[\mathbf{I} - \mathbf{A}]^{-1} \mathbf{f}$.

Annex C. Additional tables and figures

Table C.1. Share of total production, exports and export propensities (%), 2014-2015

		Gross	VA	Gross	VA	Gross	VA
Total economy						10.2	17.3
Goods		20.75	16.61	72.17	50.13	35.4	52.1
A	Agriculture, Forestry and Fishing	2.85	2.58	5.06	5.91	18.1	39.5
101	Sheep, Grains, Beef and Dairy Cattle	1.44	1.07	3.7	3.14	26.1	50.8
102	Poultry and Other Livestock	0.24	0.29	0.06	0.51	2.7	30.2
103	Other Agriculture	0.72	0.84	0.51	1.34	7.2	27.4
201	Aquaculture	0.05	0.04	0.02	0.04	4	18.5
301	Forestry and Logging	0.09	0.1	0.08	0.18	8.8	32
401	Fishing, hunting and trapping	0.07	0.07	0.16	0.13	22.5	30.2
501	Agriculture, Forestry and Fishing Support Services	0.23	0.17	0.53	0.58	23.2	57.2
B	Mining	6.53	7.1	39.16	32.26	61	78.3
601	Coal mining	1.43	1.15	11.44	5.98	81.3	89.9
701	Oil and gas extraction	1.28	1.79	7.34	6.96	58.6	67
801	Iron Ore Mining	1.84	2.54	15.96	13.29	88	90.2
802	Non Ferrous Metal Ore Mining	1.26	0.84	4.17	3.99	33.7	82.3
901	Non Metallic Mineral Mining	0.15	0.15	0.19	0.24	13	27.3
1001	Exploration and Mining Support Services	0.57	0.63	0.05	1.79	1	48.8
C	Manufacturing	11.37	6.93	27.95	11.96	25	29.8
1101	Meat and Meat product Manufacturing	0.96	0.39	3.63	1.05	38.6	46.1
1102	Processed Seafood Manufacturing	0.03	0.02	0.19	0.08	56.7	59.6
1103	Dairy Product Manufacturing	0.4	0.16	0.82	0.25	20.7	27.2
1104	Fruit and Vegetable Product Manufacturing	0.14	0.09	0.43	0.16	30.1	33.2
1105	Oils and Fats Manufacturing	0.05	0.02	0.12	0.04	26.7	37.7
1106	Grain Mill and Cereal Product Manufacturing	0.17	0.08	0.4	0.15	24	31.4
1107	Bakery Product Manufacturing	0.25	0.2	0.19	0.13	7.9	11.8
1108	Sugar and Confectionery Manufacturing	0.31	0.16	0.65	0.27	21.2	29.5
1109	Other Food Product Manufacturing	0.29	0.19	0.4	0.28	13.9	25.5
1201	Soft Drinks, Cordials and Syrup Manufacturing	0.18	0.12	0.23	0.11	13.1	15.8
1202	Beer Manufacturing	0.14	0.12	0.14	0.14	10	19.6
1205	Wine, Spirits and Tobacco	0.24	0.2	0.65	0.35	27.4	30.8
1301	Textile Manufacturing	0.02	0.02	0.08	0.05	50.8	60.6
1302	Tanned Leather, Dressed Fur and Leather Product Manufacturing	0.04	0.03	0.34	0.18	91.3	94.3
1303	Textile Product Manufacturing	0.08	0.08	0.06	0.06	7.2	13.6

		Gross	VA	Gross	VA	Gross	VA
1304	Knitted Product Manufacturing	0	0	0.01	0.01	61.9	66.2
1305	Clothing Manufacturing	0.04	0.04	0.19	0.13	44.2	51.3
1306	Footwear Manufacturing	0.01	0.01	0.07	0.04	72.2	75.5
1401	Sawmill Product Manufacturing	0.15	0.11	0.34	0.19	23.5	30.6
1402	Other Wood Product Manufacturing	0.27	0.18	0.05	0.08	1.8	7.9
1501	Pulp, Paper and Paperboard Manufacturing	0.07	0.04	0.06	0.05	8.8	26
1502	Paper Stationery and Other Converted Paper Product Manufact.	0.22	0.14	0.35	0.22	16.1	27.3
1601	Printing (including the reproduction of recorded media)	0.21	0.22	0.06	0.25	3.1	19.2
1701	Petroleum and Coal Product Manufacturing	0.75	0.32	0.95	0.61	12.8	33.1
1801	Human Pharmaceutical and Medicinal Product Manufacturing	0.36	0.22	0.4	0.18	11.5	14
1802	Veterinary Pharmaceutical and Medicinal Product Manufacturing	0.02	0.01	0.09	0.05	52	62.9
1803	Basic Chemical Manufacturing	0.49	0.31	1.7	0.93	35.6	52.1
1804	Cleaning Compounds and Toiletry Preparation Manufacturing	0.11	0.11	0.25	0.19	22.1	28.9
1901	Polymer Product Manufacturing	0.39	0.28	0.4	0.34	10.5	21.2
1902	Natural Rubber Product Manufacturing	0.02	0.02	0.05	0.05	22.1	39.9
2001	Glass and Glass Product Manufacturing	0.11	0.1	0.05	0.09	4.2	15.5
2002	Ceramic Product Manufacturing	0.04	0.03	0.02	0.02	4.2	12.3
2003	Cement, Lime and Ready-Mixed Concrete Manufacturing	0.32	0.22	0.02	0.11	0.8	8.4
2004	Plaster and Concrete Product Manufacturing	0.11	0.06	0.02	0.04	1.8	9.6
2005	Other Non-Metallic Mineral Product Manufacturing	0.05	0.04	0.06	0.04	11.1	18.3
2101	Iron and Steel Manufacturing	0.28	0.17	0.32	0.26	11.7	27
2102	Basic Non-Ferrous Metal Manufacturing	1.2	0.26	9.88	1.37	83.8	90.8
2201	Forged Iron and Steel Product Manufacturing	0.02	0.02	0.02	0.04	8.6	33.8
2202	Structural Metal Product Manufacturing	0.51	0.38	0.3	0.49	6.1	22.1
2203	Metal Containers and Other Sheet Metal Product manufacturing	0.13	0.13	0.06	0.11	5	15.4
2204	Other Fabricated Metal Product manufacturing	0.25	0.17	0.3	0.28	12.6	27.4
2301	Motor Vehicles and Parts; Other Transport Equipment Manufact.	0.41	0.24	0.98	0.45	24.5	32.7
2302	Ships and Boat Manufacturing	0.18	0.12	0.29	0.16	15.8	23.5
2303	Railway Rolling Stock Manufacturing	0.11	0.05	0.03	0.06	2.4	19
2304	Aircraft Manufacturing	0.16	0.12	0.29	0.21	18.9	31.2
2401	Professional, Scientific, Computer and Electronic Equip. Man.	0.24	0.26	0.9	0.68	38.4	45.4
2403	Electrical Equipment Manufacturing	0.14	0.11	0.17	0.14	12.5	22.4
2404	Domestic Appliance Manufacturing	0.04	0.03	0.03	0.02	7.1	11.6
2405	Specialised and other Machinery and Equipment Manufacturing	0.46	0.38	0.65	0.62	14.3	28.1
2501	Furniture Manufacturing	0.14	0.11	0.04	0.03	2.9	5.4
2502	Other Manufactured Products	0.08	0.06	0.24	0.14	31.3	38.9
D-E	Electricity, Gas, Water and Waste Services	3.06	2.77	0.12	2.22	0.4	13.8
2601	Electricity Generation	0.59	0.27	0.04	0.3	0.7	19.2
2605	Electricity Transmission, Distribution, On Selling & Mkt Op.	1.46	1.29	0.05	1.11	0.3	14.9
2701	Gas Supply	0.16	0.12	0.01	0.15	0.6	22.9
2801	Water Supply, Sewerage and Drainage Services	0.68	0.83	0.02	0.46	0.3	9.7

		Gross	VA	Gross	VA	Gross	VA
2901	Waste Collection, Treatment and Disposal Services	0.17	0.28	0.01	0.19	0.3	11.7
F	Construction	13.98	8.64	0.3	3.24	0.2	6.5
3001	Residential Building Construction	2.5	0.99	0.03	0.17	0.1	3
3002	Non-Residential Building Construction	1.59	0.73	0.03	0.12	0.2	2.8
3101	Heavy and Civil Engineering Construction	3.04	2.27	0.08	0.6	0.3	4.5
3201	Construction Services	6.85	4.65	0.16	2.36	0.2	8.8
G	Wholesale Trade and Retail	8.07	8.84	6.45	7.47	8.1	14.6
3301	Wholesale Trade	4.27	4.23	5.2	5.56	12.4	22.7
3901	Retail Trade	3.8	4.6	1.24	1.91	3.3	7.1
I	Accommodation and Food Services	2.68	2.67	2.87	2.37	10.9	15.3
4401	Accommodation	0.54	0.55	1.63	1.22	30.9	37.8
4501	Food and Beverage Services	2.15	2.11	1.25	1.16	5.9	9.4
H	Transport, Postal and Warehousing	5.76	5.15	7.58	7.77	13.4	26
4601	Road Transport	1.82	1.59	2.73	2.59	15.3	28.1
4701	Rail Transport	0.49	0.43	1.37	1.02	28.3	40.4
4801	Water, Pipeline and Other Transport	0.32	0.28	0.34	0.45	10.7	27.8
4901	Air and Space Transport	0.83	0.59	1.39	0.85	17	24.9
5101	Postal and Courier Pick-up and Delivery Service	0.39	0.33	0.48	0.46	12.4	24.6
5201	Transport Support services and storage	1.91	1.93	1.28	2.4	6.8	21.4
J	Information and Communication	3.24	2.91	1.08	2.01	3.4	11.9
5401	Publishing (except Internet and Music Publishing)	0.38	0.46	0.44	0.52	11.6	19.3
5501	Motion Picture and Sound Recording	0.26	0.17	0.08	0.08	3.3	7.8
5601	Broadcasting (except Internet)	0.37	0.38	0.06	0.24	1.7	11.1
5701	Internet Services (Provid./Publ./Broad./Websearch/Data Proc.)	0.34	0.3	0.09	0.21	2.7	11.8
5801	Telecommunication Services	1.83	1.52	0.39	0.94	2.2	10.8
6001	Library and Other Information Services	0.06	0.09	0.02	0.02	4.2	4.9
K	Financial and Insurance Services	7.5	9.38	1.36	6.26	1.9	11.5
6201	Finance	4.22	6.43	0.93	4.23	2.2	11.4
6301	Insurance and Superannuation Funds	1.71	1.28	0.14	0.27	0.8	3.7
6401	Auxiliary Finance and Insurance Services	1.57	1.67	0.3	1.75	1.9	18.1
L	Real Estate Activities	9.36	12.61	0.95	3.41	1	4.7
6601	Rental and Hiring Services (except Real Estate)	0.68	0.46	0.28	0.61	4.2	23
6701	Ownership of Dwellings	6.24	9.6	0.63	0.58	1	1
6702	Non-Residential Property Operators and Real Estate Services	2.43	2.55	0.04	2.22	0.2	15
M	Professional, Scientific and Technical Activities	6.79	6.82	2.73	7.01	4.1	17.7
6901	Professional, Scientific and Technical Services	5.28	5.12	2.19	5.95	4.2	20
7001	Computer Systems Design and Related Services	1.51	1.69	0.54	1.06	3.6	10.9
N	Administrative and Support Services Activities	2.8	3	0.59	2.78	2.1	16
7210	Employment, Travel Agency and Other Administrative Services	2.25	2.57	0.58	2.46	2.6	16.5
7310	Building Cleaning, Pest Control and Other Support Services	0.55	0.42	0.01	0.32	0.2	13
O	Public administration and defence; comp. social security	4.7	5.62	0.11	0.87	0.2	2.7
7501	Public Administration and Regulatory Services	3.1	3.47	0.05	0.48	0.2	2.4
7601	Defence	0.81	1.16	0.04	0.04	0.5	0.6

		Gross	VA	Gross	VA	Gross	VA
7701	Public Order and Safety	0.8	0.98	0.02	0.35	0.2	6.1
P	Education	3.4	5.05	3.03	2.78	9.1	9.5
8010	Primary and Secondary Education Services (incl Pre- & Spe.)	1.79	2.76	0.12	0.11	0.7	0.7
8110	Technical, Vocational and Tertiary Education (incl grad.)	1.37	1.99	2.75	2.52	20.5	21.9
8210	Arts, Sports, Adult and Other Education Ser. (incl com. ed.)	0.25	0.3	0.16	0.15	6.5	8.4
Q	Human health and social work activities	4.88	7.11	0.15	0.19	0.3	0.5
8401	Health Care Services	3.06	4.15	0.12	0.16	0.4	0.7
8601	Residential Care and Social Assistance Services	1.82	2.96	0.03	0.03	0.2	0.2
R	Arts and Recreation Services	1.14	0.88	0.39	0.32	3.5	6.4
8901	Heritage, Creative and Performing Arts	0.24	0.26	0.08	0.13	3.2	8.6
9101	Sports and Recreation	0.6	0.42	0.18	0.13	3	5.4
9201	Gambling	0.3	0.2	0.14	0.06	4.8	5.4
S	Other Services	1.87	1.95	0.11	1.16	0.6	10.3
9401	Automotive Repair and Maintenance	0.56	0.51	0.02	0.39	0.3	13.1
9402	Other Repair and Maintenance	0.44	0.36	0	0.62	0	29.9
9501	Personal Services	0.48	0.4	0.06	0.07	1.3	3.2
9502	Other Services	0.39	0.69	0.02	0.09	0.6	2.2

Note: In 2014-15, total production was valued at AUD 3 022 866 in gross terms and AUD 1 523 869 in value added terms. In 2014-15, total exports were valued at AUD 307 657 in gross terms and AUD 262 870 in value added terms.

Source: Own calculations based on ABS, Australian National Accounts: Input-Output Tables, 2014-15, catalogue no. 5209.0.55.001 Table 3 and 5.

Table C.2. Decomposition of value added (%), 2014-15

Industry	Direct value added	Indirect	
		Domestic value added	Foreign value added
Total	56.4	34.3	9.3
Goods	47.3	36.9	15.8
Agriculture, Forestry and Fishing	48.1	39	13
Mining	59.3	30.5	10.2
Manufacturing	34.7	42.7	22.7
Services	58.2	33.8	8.0
Electricity, Gas, Water and Waste Services	50.8	41.9	7.3
Construction	32.5	51	16.6
Wholesale Trade and Retail	55.7	36.3	8
Accommodation and Food Services	50.2	40	9.9
Transport, Postal and Warehousing	45.7	41.8	12.5
Information and Communication	46.9	41.9	11.2
Financial and Insurance Services	67.3	29.5	3.2
Real Estate Activities	71	26.4	2.6
Professional, Scientific and Technical Activities	50.8	41.4	7.9
Administrative and Support Services Activities	54.9	37.7	7.3
Public administration and defence; comp. social security	60.8	32.2	7
Education	75	18.8	6.3
Human health and social work activities	74.1	18	7.9
Arts and Recreation Services	40.4	42.6	17
Other Services	59.1	25.2	15.7

Source: Own calculations based on ABS, Australian National Accounts: Input-Output Tables, 2014-15, catalogue 5209.0.55.001, Tables 3 and 5.

Table C.3. Value-added composition of outsourced inputs (%), 2014-15

Domestically sourced intermediate inputs					
Industry	Share %	Sector origin			
		A	B	C	D-S
Total economy	34.3	3.2	3.2	7.8	85.8
Goods	36.9	10.8	9	11.6	68.6
Agriculture, Forestry and Fishing	39	25.7	2.1	9.7	62.5
Mining	30.5	0.9	14	8.1	77
Manufacturing	42.7	12.9	7.6	14.9	64.6
Services	33.8	1.6	2	6.9	89.5
Electricity, Gas, Water and Waste Services	41.9	0.4	3	3.9	92.8
Construction	51	1.3	3.2	15.1	80.4
Wholesale Trade and Retail	36.3	3.2	2.1	6.4	88.3
Accommodation and Food Services	40	11	1.9	15.3	71.8
Transport, Postal and Warehousing	41.8	0.5	2.1	7.2	90.2
Information and Communication	41.9	0.6	1.3	5	93.1
Financial and Insurance Services	29.5	0.3	0.8	1.8	97
Real Estate Activities	26.4	0.8	1.2	3.1	95
Professional, Scientific and Technical Activities	41.4	0.6	2	3.6	93.7
Administrative and Support Services Activities	37.7	0.9	2.3	4.2	92.6
Public administration and defence; comp. social security	32.2	0.8	1.8	5.4	92
Education	18.8	1.3	1.5	5.8	91.4
Human health and social work activities	18	2.8	1.6	8.4	87.2
Arts and Recreation Services	42.6	3.2	1.3	8	87.5
Other Services	25.2	2.3	1.9	11.9	83.8
Imported intermediate inputs					
Sector	Share %	Sector origin (%)			
		A	B	C	D-S
Total economy	9.3	0.5	7.8	71.2	20.6
Goods	15.8	0.8	13.6	75.7	9.9
Agriculture, Forestry and Fishing	13	1.9	12.4	76.4	9.3
Mining	10.2	0.1	10	74.1	15.8
Manufacturing	22.7	0.9	15.5	76.3	7.3
Services	8	0.3	5.5	69.5	24.7
Electricity, Gas, Water and Waste Services	7.3	0.1	6.2	76.3	17.4
Construction	16.5	0.2	3.9	83.3	12.7
Wholesale Trade and Retail	8	0.6	14.5	62	22.9
Accommodation and Food Services	9.9	1.9	4.5	80	13.6
Transport, Postal and Warehousing	12.5	0.1	11.4	73.6	14.9
Information and Communication	11.2	0.2	3.7	55.8	40.4
Financial and Insurance Services	3.2	0.1	3.8	39.8	56.2
Real Estate Activities	2.6	0.2	3.7	59.5	36.6
Professional, Scientific and Technical Activities	7.9	0.2	3.4	41.5	54.9
Administrative and Support Services Activities	7.3	0.3	3.3	48.7	47.8
Public administration and defence; comp. social security	7	0.2	4.9	64.3	30.6
Education	6.3	0.3	2.4	71.9	25.5
Human health and social work activities	7.9	0.3	2.5	86.3	11
Arts and Recreation Services	17	0.8	2.1	75.6	21.6
Other Services	15.7	0.3	2	88.9	8.9

Note: Final exporting industries are defined as follows: Agriculture (A), Mining (B), Manufacturing (C) and Services (D-S). For more details, see Table A.1.

Source: Own calculations based on ABS, Australian National Accounts: Input-Output Tables, 2014-15, catalogue 5209.0.55.001, Tables 3 and 5.

Table C.4. Australia's exports by partner and main aggregates, 2016

Country (ISO3)	Export (AUD mio.)	Share (%)						
		Travel, business	Travel education	Travel, other personal	Transport	Finance & insurance	Business services	Other services
World	71 248	5.9	30.8	24.4	10.2	5.7	20.1	2.9
Asia and Oceania	43 827	5.9	41.3	24.7	8.7	4.4	12.5	2.5
Brunei Darussalam (BRN)	53	1.9	25.9	24.1	22.2	1.9	20.4	3.7
China, People's Republic of (CHN)	11 260	5.5	53.8	30.2	4.2	3.1	1.8	1.4
Chinese Taipei (TWN)	1 122	4.8	38.1	47	0.8	4	4.9	0.4
Fiji (FJI)	164	10.4	11.6	39	22.6	0.6	14	1.8
Hong Kong, China (HKG)	2 507	4.1	21.6	23	24.7	7.9	16.8	2
India (IND)	3 484	7.7	74.1	11.4	0.7	1.6	2.5	2.1
Indonesia (IDN)	1 403	4.3	46.9	22.8	11.7	1.2	11.5	1.5
Japan (JPN)	2 281	6.2	16.1	38.4	23.3	5.1	8.9	1.9
Korea (KOR)	2 056	5.7	42.6	43.6	2.9	1.9	1.9	1.5
Malaysia (MYS)	1 903	4.4	48.8	31.1	1.5	4.7	7.5	2
New Zealand (NZL)	4 265	13.6	4.4	36.4	13.6	13	14.5	4.5
Papua New Guinea (PNG)	482	7.3	14.5	17.4	3.5	6.8	46.1	4.4
Philippines (PHL)	706	9.6	53.2	21.3	3.1	0.7	10.4	1.7
Singapore (SGP)	4 838	5	6.3	13.8	13.3	4.3	50.7	6.6
Thailand (THA)	1 117	4.1	71.4	12.3	7.4	0.4	3	1.3
Viet Nam (VNM)	1 280	2	84.9	7.6	2.4	0.2	1.6	1.3
Americas	11 244	6.6	15.7	17.6	8.2	9	38.9	4.1
Canada (CAN)	872	11.8	17.9	40.9	5	6.2	12.5	5.6
Chile (CHL)	187	4.8	42.6	21.3	19.1	0	10.6	1.6
Mexico (MEX)	94	3.2	76.6	13.8	0	0	4.3	2.1
Peru (PER)	60	3.3	70.5	9.8	6.6	1.6	4.9	3.3
United States (USA)	8 214	7.3	3.3	17.5	10	9.4	48	4.7
Europe	12 073	6.9	13.3	36.3	9.1	7.1	24.4	3
European Union (27 countries)	10 530	7.4	13.4	38.6	6.9	7.4	23.5	2.8
Belgium (BEL)	137	13	9.9	37.4	1.5	13	22.1	3.1
France (FRA)	841	8.6	18.2	42.3	3.2	2.6	22.7	2.4
Germany (DEU)	1 444	6.6	10.1	42.4	10.5	6.4	22.3	1.6
Greece (GRC)	84	8.2	45.9	27.1	9.4	1.2	1.2	7.1
Ireland (IRL)	511	9	6.1	27.7	0.6	2.9	52	1.8
Italy (ITA)	595	9.4	44.5	40.7	0.3	0.2	3	1.8
Netherlands (NLD)	432	8.5	7.6	34.8	2.1	11.8	32.7	2.5
Sweden (SWE)	272	7.3	22.3	49.3	5.5	0.7	13.1	1.8
United Kingdom (GBR)	4 830	7.4	4.6	40.9	5.2	11.6	27.2	3.2
Rest of Europe	1 543	3.1	12.4	20.4	24.2	5	30.7	4.3
Norway (NOR)	243	3.7	25.5	25.5	32.9	2.9	7.4	2.1
Switzerland (CHE)	939	2.3	4.1	18.5	27.7	1.6	42.3	3.4
Russia (RUS)	111	6.3	41.4	29.7	0	0.9	16.2	5.4
Africa	1 072	4.3	45.5	14.8	12.8	3.9	15.2	3.6
South Africa (ZAF)	313	10.2	8.6	33.6	28.6	1.6	13.2	4.3
Unallocated	3 026							

Note: The table reports data prior to the August 2017 revision of international services trade. For more information on the revisions, please refer to the ABS Information Paper: Changes to the Australian System of National Accounts, 2016-17 (catalogue no. 5204.0.55.012).

Source: Own calculations on OECD International Trade in Services Statistics by Partner Country (ITSS), EBOPS 2010.

Table C.5. Australia's imports by partner and main aggregates, 2016

Country (ISO3)	Import AUD mio	Share (%)						
		Travel, business	Travel, education	Travel, other personal	Transport	Finance & insurance	Business service	Other services
World	75 511	4.7	1.8	37.9	21.8	3.9	25.6	4.4
Asia and Oceania	35 429	5.3	2.1	39.9	28.9	2.1	18.8	2.9
Brunei Darussalam (BRN)	63	3.2	1.6	12.7	79.4	0	1.6	1.6
China, People's Republic of (CHN)	2 616	10	3.9	35.7	29.8	2	15.3	3.3
Chinese Taipei (TWN)	224	7.6	3.1	45.7	28.7	1.8	10.3	2.7
Fiji (FJI)	1 086	4	2.2	80.2	12	0	0.7	0.8
Hong Kong, China (HKG)	2 853	3.7	0.8	16.7	46.1	5.2	26.4	1.1
India (IND)	1 749	5.5	1.5	35.2	0.4	1.6	52.5	3.3
Indonesia (IDN)	3 074	3.7	2	78.9	8.3	0.1	3	4
Japan (JPN)	2 897	4.1	3.2	41.5	32.9	2.2	14.5	1.4
Korea (KOR)	940	3.6	1.4	11.6	46.5	4.6	30.1	2.2
Malaysia (MYS)	872	6.8	2.6	42.5	31.4	2.3	12.2	2.2
New Zealand (NZL)	4 239	6.8	2.6	53.8	17.8	3.8	14.1	1
Papua New Guinea (PNG)	379	32.6	3.4	27.6	0.3	0.5	20.3	15.3
Philippines (PHL)	831	7.1	1.9	48.4	0.4	4.4	33.7	4.1
Singapore (SGP)	5 235	3.7	0.9	12.7	37	3	41.2	1.5
Thailand (THA)	1 983	3.7	2	64.7	26.3	0.3	2.1	0.9
Viet Nam (VNM)	951	5.6	2.2	68.5	17.8	0.8	2.7	2.4
Americas	16 717	4.5	1.2	39.7	8.2	5.7	32.9	7.9
Canada (CAN)	1 616	4	1.2	51.1	23.7	1.1	16	3
Chile (CHL)	246	2.8	0.4	38.6	55.3	0	1.2	1.6
Mexico (MEX)	136	3	1.5	84.4	0	2.2	5.9	3
Peru (PER)	116	1.7	2.6	89.7	0	0	5.1	0.9
United States (USA)	13 865	4.7	1.2	36.8	5.2	6.5	36.6	9
Europe	20 403	4	1.9	33.6	20.3	5.6	30.2	4.3
European Union (27 countries)	18 561	4	2	35.4	19.7	5.5	29.3	4.2
Belgium (BEL)	216	4.6	1.4	8.3	20.7	14.3	44.2	6.5
France (FRA)	1 861	3.1	2.8	48	17.7	1.5	24.9	2
Germany (DEU)	2 835	3.3	1.6	14.7	46.9	1.8	30.7	1
Greece (GRC)	710	3.7	1.4	36	55.1	0.6	1.4	1.8
Ireland (IRL)	1 058	2.6	1	22.9	2.4	0.2	70.2	0.7
Italy (ITA)	1 552	3.7	4.1	82.4	0.3	0.6	8	0.7
Netherlands (NLD)	1 194	2.6	1.3	8.5	19.3	4	50.1	14.2
Sweden (SWE)	381	3.9	1.6	12.3	3.9	0.5	77	0.8
United Kingdom (GBR)	7 001	4.2	1.8	40.4	7.3	11.8	28.5	6.1
Rest of Europe	1 842	4.1	0.7	15.5	26.9	6.6	40.3	5.8
Norway (NOR)	476	2.1	0.4	8.6	70.2	0	18.7	0
Switzerland (CHE)	882	3.2	0.7	7.7	9.5	6.5	63.4	9.1
Russian Federation (RUS)	72	14.1	2.8	50.7	22.5	0	0	9.9
Africa	1 255	8.1	1.8	62.2	14	0.6	8.8	4.3
South Africa (ZAF)	649	8.2	1.7	58.6	21	1.1	7	2.5
Unallocated	1 705							

Note: The table reports data prior to the August 2017 revision of international services trade. For more information on the revisions, please refer to the ABS Information Paper: Changes to the Australian System of National Accounts, 2016-17 (catalogue no. 5204.0.55.012).

Source: Own calculations on OECD International Trade in Services Statistics by Partner Country (ITSS), EBOPS 2010.

Table C.6. The determinants of Australia's bilateral exports, 2014-2016

Dependent variable: Total Services Exports							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Ln(GDP)	0.644*** (0.095)	0.757*** (0.085)	0.786*** (0.102)	0.634*** (0.099)	0.646*** (0.101)	0.645*** (0.095)	0.682*** (0.119)
Ln(Distance)	-1.087** (0.426)	-0.892* (0.46)	-1.332*** (0.401)	-1.027** (0.404)	-1.096** (0.456)	-1.104** (0.432)	-1.498*** (0.520)
FTA	0.517** (0.231)	0.206 (0.309)	0.430** (0.215)	0.630*** (0.216)	0.522** (0.216)	0.503** (0.235)	0.330 (0.269)
Common language	1.120*** (0.259)	1.129*** (0.257)	0.814** (0.337)	1.222*** (0.223)	1.109*** (0.285)	1.094*** (0.248)	0.865** (0.376)
Former colony	1.036*** (0.250)		0.696*** (0.261)	1.009*** (0.234)	1.048*** (0.258)	1.048*** (0.248)	1.142*** (0.308)
STRI, level	-3.979*** (0.630)	-1.943* (1.111)					
STRI, heterogeneity		-7.402*** (2.206)					
STRI, all Modes			-2.227 (1.362)				
STRI, Mode 3			-7.597*** (0.718)				
STRI, Mode 4			13.228*** (3.109)				
STRI, DR & other				-0.275 (1.341)			
STRI, MA & NT				-5.807*** (1.176)			
STRI, establishment					-4.418** (2.053)		
STRI, operations					-3.440*** (1.288)		
STRI, non- discriminatory						-4.505*** (1.261)	
STRI, discriminatory						-3.746*** (0.485)	
STRI, foreign entry							-10.596*** (1.610)
STRI, movement of people							11.152*** (2.659)
STRI, other discriminatory							11.268 (7.297)
STRI, barriers competition							-7.284* (4.360)
STRI, regulatory transpar.							4.316 (6.577)
Sector fixed effects	YES	YES	YES	YES	YES	YES	YES
Year fixed effects	YES	YES	YES	YES	YES	YES	YES
Observations	413	413	413	413	413	413	413
R-squared	0.857	0.827	0.859	0.875	0.856	0.855	0.900

Note: Gravity regressions using PPML. Robust standard errors clustered by sectors are provided in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The variables 'FTA', 'Common language' and 'Former colony' are binary variables (0/1).

Source: Regressions using OECD International Trade in Services Statistics by Partner Country (ITSS), CEPII gravity dataset, OECD STRI data, and WTO RTA dataset.

Table C.7. Factors determining bilateral exports of travel services, 2005-2015

Dependent variable:	Total	Business	Personal, education	Personal, other
Ln(GDP_x)	0.96*** (0.02)	0.62*** (0.03)	0.42*** (0.08)	0.61*** (0.03)
Ln(GDP_m)	0.70*** (0.02)	0.69*** (0.03)	1.36*** (0.05)	0.74*** (0.03)
Ln(distance)	-0.65*** (0.03)	-0.83*** (0.04)	-0.46*** (0.07)	-0.95*** (0.04)
Contiguity	0.88*** (0.08)	0.79*** (0.21)	-0.94*** (0.19)	0.43*** (0.13)
Common language	0.20*** (0.06)	0.14 (0.17)	0.49*** (0.08)	0.36*** (0.10)
Hegemon_x	0.29*** (0.06)	0.87*** (0.17)	0.50*** (0.16)	0.57*** (0.13)
Hegemon_m	0.51*** (0.08)	1.05*** (0.09)	-0.76*** (0.12)	1.51*** (0.10)
FTA	0.12** (0.05)	0.55*** (0.09)	0.43*** (0.11)	0.14* (0.08)
Ln(1+top 200 universities_x)			0.87*** (0.08)	
Ln(1+top 200 universities_m)			-0.81*** (0.04)	
AUS, 2005	1.64*** (0.21)	1.28*** (0.25)	2.76*** (0.30)	1.65*** (0.24)
AUS, 2006	1.60*** (0.20)	1.14*** (0.24)	2.68*** (0.31)	1.45*** (0.22)
AUS, 2007	1.66*** (0.20)	1.31*** (0.23)	2.74*** (0.27)	1.47*** (0.21)
AUS, 2008	1.51*** (0.21)	1.27*** (0.22)	2.93*** (0.26)	1.34*** (0.20)
AUS, 2009	1.70*** (0.22)	1.47*** (0.23)	2.99*** (0.25)	1.45*** (0.20)
AUS, 2010	1.61*** (0.21)	1.47*** (0.22)	2.81*** (0.28)	1.39*** (0.19)
AUS, 2011	1.50*** (0.20)	1.69*** (0.22)	2.73*** (0.25)	1.30*** (0.19)
AUS, 2012	1.34*** (0.20)	1.69*** (0.21)	2.53*** (0.32)	1.21*** (0.19)
AUS, 2013	1.27*** (0.20)	1.41*** (0.24)	2.23*** (0.33)	0.90*** (0.23)
AUS, 2014	1.23*** (0.20)	1.34*** (0.23)	2.05*** (0.34)	1.05*** (0.23)
AUS, 2015	1.10*** (0.21)	1.13*** (0.24)	1.75*** (0.30)	1.06*** (0.24)
Year fixed effects	YES	YES	YES	YES
Observations	6 943	5 242	4 986	4 514
Pseudo R2	0.83	0.70	0.77	0.70

Note: Gravity regressions using PPML. Robust standard errors are provided in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The indices “x” and “m” stand for exporting and importing country, respectively. The variables 'Contiguity', 'Common language' and 'FTA' are binary variables (0/1).

Source: Regressions using OECD International Trade in Services Statistics by Partner Country (ITSS), CEPII gravity dataset and OECD STRI data, and WTO RTA dataset.

Table C.8. Regulatory barriers and firm-level exports

Dependent variable: Firm-level total services exports							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Ln(turnover)	0.318*** (0.026)	0.320*** (0.028)	0.318*** (0.029)	0.317*** (0.026)	0.108 (0.085)	0.305*** (0.028)	0.259*** (0.029)
Services importer	2.973*** (0.270)	2.908*** (0.268)	2.991*** (0.275)	2.976*** (0.269)	2.922*** (0.288)	2.876*** (0.286)	2.084*** (0.253)
Main activity goods	-0.752** (0.351)	-0.763** (0.353)	-0.745** (0.348)	-0.750** (0.352)	-0.696* (0.369)	-0.688** (0.338)	-0.638* (0.332)
Ln(GDP)	0.464*** (0.097)	0.566*** (0.094)	0.464*** (0.098)	0.472*** (0.095)	0.475*** (0.096)	0.467*** (0.098)	0.371*** (0.098)
Ln(distance)	-0.734*** (0.242)	-0.888*** (0.211)	-0.619*** (0.237)	-0.779*** (0.237)	-0.775*** (0.243)	-0.738*** (0.244)	-0.483** (0.246)
FTA	0.061 (0.250)	0.129 (0.211)	0.176 (0.226)	0.032 (0.263)	0.045 (0.257)	0.064 (0.251)	0.145 (0.227)
Common language	0.675*** (0.192)	0.609*** (0.208)	0.769*** (0.235)	0.630*** (0.187)	0.652*** (0.191)	0.677*** (0.194)	0.574*** (0.185)
STRI, level	-2.352* (1.248)				-12.685** (5.399)	-4.984*** (1.570)	-6.622*** (1.774)
STRI, Mode 1/2		-27.907** (11.978)					
STRI, Mode 3		-3.617*** (1.293)					
STRI, Mode 4		9.583* (5.276)					
STRI, all Modes		0.637 (2.651)					
STRI, discriminatory			-3.076** (1.243)				
STRI, non-discriminatory			0.140 (2.562)				
STRI, establishment				-4.016*** (1.462)			
STRI, operations				-1.085 (1.689)			
STRI * Ln(turnover)					0.742** (0.358)		
Previous exporter						0.272 (0.461)	
STRI * prev. exporter						2.702** (1.267)	
Prev. exp. same ctry							1.205** (0.482)
STRI * prev. exp. same ctry							4.859*** (1.392)
Sector fixed effects	YES	YES	YES	YES	YES	YES	YES
Year fixed effects	YES	YES	YES	YES	YES	YES	YES
Observations	68 483	60 939	60 939	68 483	68 483	68 483	68 483
R-squared	0.396	0.418	0.393	0.402	0.429	0.393	0.389

Note: Gravity regressions using PPML. Robust standard errors clustered by importing country are provided in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The variables 'Services importer', 'Main activity goods', 'FTA' and 'Common language' are binary variables (0/1).

Source: Regressions based on ABS Survey of International Trade in Services data.

Table C.9. Determinants of Australia's outward FDI

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	AS	CO	DS	FSbnk	FSins	LS	PSeng	TC	TR
Ln(GDP)	0.728*** (0.204)	1.285*** (0.459)	0.298 (0.301)	1.224*** (0.229)	1.359*** (0.193)	2.205*** (0.560)	0.969*** (0.289)	1.767** (0.792)	0.744*** (0.217)
Ln(dist.)	-1.377** (0.549)	-2.581*** (0.840)	-1.773** (0.725)	-3.568*** (0.504)	-1.467*** (0.469)	-6.862*** (1.864)	-0.144 (0.777)	-5.513** (2.448)	-3.837*** (0.692)
Common lang.	1.858** (0.803)	3.478 (3.116)	2.814*** (0.615)	2.276*** (0.674)	5.956*** (0.669)	6.782*** (1.817)	1.383*** (0.498)	5.105** (2.437)	2.906*** (0.827)
FTA	0.392 (0.628)	-0.943 (0.998)	0.809 (0.917)	-1.143 (0.806)	-1.203*** (0.395)	-1.607* (0.864)	0.006 (0.591)	-2.214 (2.361)	-0.988* (0.531)
Profit tax	0.005 (0.028)	-0.076 (0.056)	0.059*** (0.021)	-0.036 (0.030)	0.050*** (0.013)	0.099** (0.049)	-0.083*** (0.026)	-0.097 (0.110)	0.048*** (0.016)
STRI, level	-17.436*** (6.529)	-11.871 (20.470)	-8.483* (4.392)	-1.939 (3.394)	-14.433*** (1.245)	-61.550*** (16.957)	-3.049 (3.876)	-13.686 (11.791)	4.685** (1.984)
Obs.	1 596	4 452	24 402	14 490	7 644	1 134	630	1 050	3 150
R-squared	0.153	0.043	0.016	0.022	0.040	0.167	0.333	0.144	0.062

Source: Own regressions based on ABS Survey of International Investment data.

Table C.10. Number of arbitration cases at most important arbitration institutions

	2012	2013	2014	2015	2016
ICC (International Chamber of Commerce)	759	767	791	801	966
DIS (German Institution of Arbitration)	121	121	132	134	166
SCC (Stockholm Chamber of Commerce)	177	203	183	181	199
VIAC (Vienna International Arbitration Center)	70	56	56	40	60
SCAI (Swiss Chamber's Arbitration Institution)	92	68	105	100	81
LCIA (London Court of International Arbitration)	277	301	296	326	303
ICDR (International Center for Dispute Resolution)	996	1 165	1 052	1 063	1 050
SIAC (Singapore International Arbitration Centre)	235	259	222	271	343
CIETAC (China International Economic and Trade Arbitration Commission)	1 060	1 256	1 610	1 968	2 183
HKIAC (Hong Kong International Arbitration Centre)	293	260	252	271	262
ICSID (International Centre for Settlement of Investment Disputes)	50	40	38	52	48

Source: <https://globalarbitrationnews.com/international-arbitration-statistics-2016-busy-times-for-arbitral-institutions/>.

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