



FINAL REPORT

Australian trade and investment liberalisation

Analysis of the economic and distributional impacts on Victoria

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Executive summary

Over the past three decades, Australia has undertaken a series of microeconomic reforms designed to improve the efficiency of the Australian economy. Notable reforms have included floating the dollar, deregulation of financial markets, broadening of the tax base and corporatisation of government businesses.

An integral part of the reform agenda has been the sustained reduction of trade and investment barriers. Australia has reduced both formal and informal barriers to trade and investment through unilateral, bilateral and multilateral reform processes.

This report estimates how the trade and investment liberalisation undertaken by Australia over the 1986–2016 period has impacted the Victorian economy, as well as how the incidence of these reforms varies across different Victorian households.

Measuring the impact of trade and investment reform over such a long period is a challenging task. Given the technical difficulties involved, where a value is uncertain, a conservative estimate of the benefits of reform has been chosen. Moreover, this report only examines the benefits of reducing Australian trade and investment barriers, and excludes any benefits to Australia from liberalisation undertaken by Australia's trading partners. As a result, the estimates reported in this paper can be considered a lower bound on the gains from trade and investment liberalisation over the 1986–2016 period.

Trade and investment liberalisation has increased economic activity, raised wages for Victorian workers, and generated jobs for Victorian workers

The economic modelling suggests that trade and investment liberalisation undertaken between 1986–2016 has resulted in Victorian Gross State Product being 9.3 per cent higher than it would have been in the absence of liberalisation. Real wages are also 9.3 per cent higher while real household consumption is 5.3 per cent higher than otherwise.

The analysis also suggests that the trade and investment liberalisation has created an additional 184 000 jobs in Victoria.

The Victorian Economy has gained more than the rest of Australia

While all regions in Australia have benefitted from the trade and investment liberalisation, shown in table 1, Victoria has fared slightly better than the rest of Australia. This is primarily due to liberalisation of services trade, and the relatively large share of international students studying in Victoria.

1 The impact of liberalisation on Victoria and the rest of Australia

	Victoria	Rest of Australia	Australia
Real gross domestic product	9.3	7.7	8.1
Real consumption	5.3	4.3	4.6
Real exports	45.5	32.1	34.2
Real wages	9.3	8.7	8.9

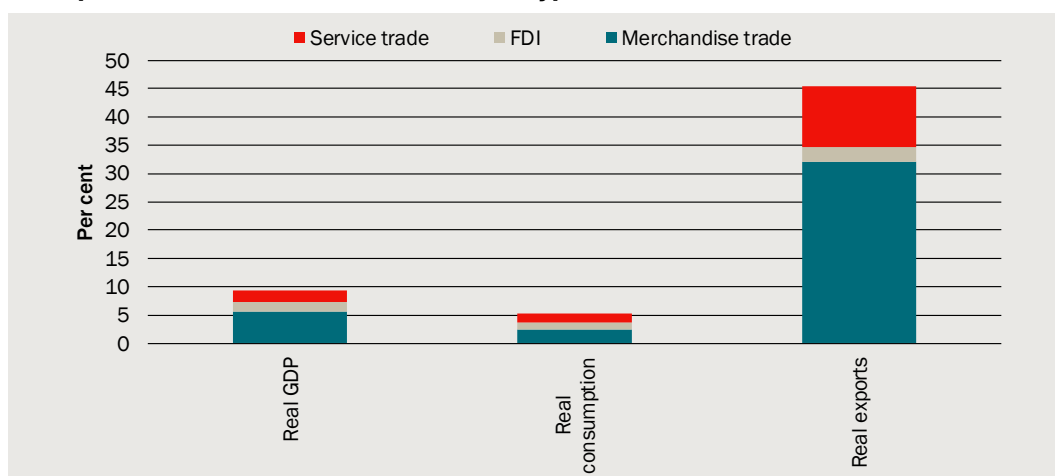
Source: CIE analysis using the GTAP and CIE-Regions models.

Tariff reform produced the largest gains, but service and investment liberalisation have also contributed significantly to economic growth

The impact of liberalisation has been estimated in the areas of merchandise trade, service trade, and foreign investment. Merchandise trade reforms are based on the reduction of merchandise tariffs over the period 1986–2016. Reforms to services trade are based on significant reforms that have occurred in the education and tourism industries, which are Australia’s two largest service export industries. Namely, the reforms from the late 1980s that allowed Australian universities to admit full fee-paying students, and the gradual relaxation of air service agreements that have increased the quantity and decreased the price of flights into Australia, and thereby increased the number of visiting international tourists. Finally, the impact of investment reforms is based on observed reductions in the OECD FDI Regulatory Restrictiveness Index, which tracks barriers to foreign investment such as restrictions on equity, screening mechanisms, and restrictions on key foreign personnel.

From chart 2 it can be seen that merchandise trade liberalisation accounts for the majority (61 per cent) of the economic output gains attributable to trade and investment liberalisation, but service liberalisation (22 per cent) and investment liberalisation (17 per cent) also significantly contribute to the Victorian economy. This suggests that excluding these reforms would significantly underestimate the benefits from international liberalisation.

2 Impact on Victorian GDP from different types of liberalisation



Data source: CIE analysis using the GTAP and CIE-Regions models.

While merchandise tariffs are now relatively close to zero for most tariff lines, there still exists barriers to foreign direct investment and trade in services. This suggests that future liberalisation efforts should focus on service and investment liberalisation. The relatively large estimated effect of service and investment liberalisation over the past 30 years suggests that further liberalisation efforts in these areas should be an area of priority for Australian governments.

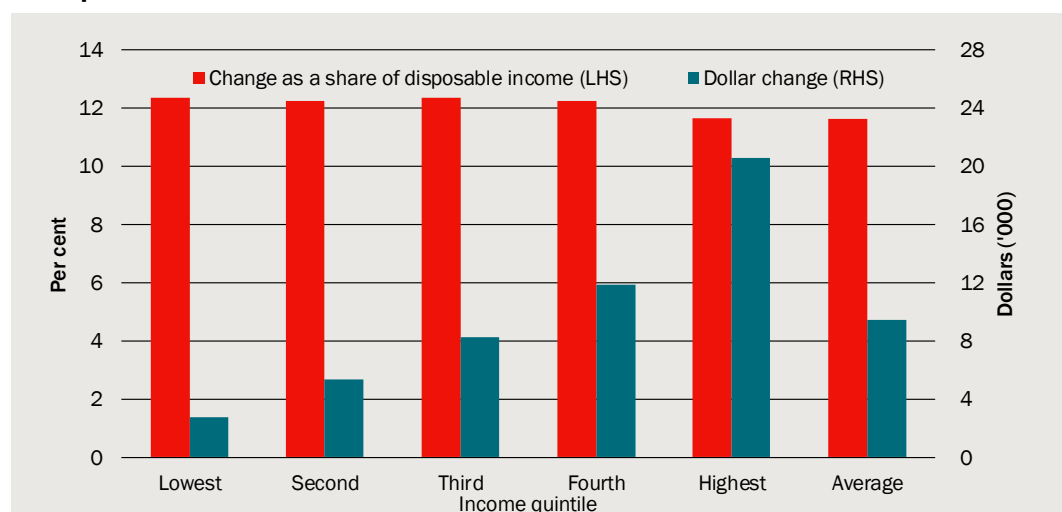
The benefits of trade liberalisation are shared by all Victorians

For the average Victorian household, total nominal income is A\$5447, or 6.7 per cent, higher than it would have been without the trade and investment liberalisation. The trade and investment liberalisation has also seen lower living expenses. By lowering tariffs, the imported goods purchased by Australian households are cheaper. If trade and investment liberalisation had not been pursued, the bundle of goods and services purchased by the average Victorian household in 2016 would have cost an additional A\$4017.

As can be seen from chart 3, the higher income and reduced expenditure is experienced across all household income quintiles. The trade and investment liberalisation undertaken by Australia over 1986–2016 is estimated to have delivered financial gains of A\$2752 to Victorian households in the lowest income quintile, and gains of A\$20 581 to households in the highest income quintile. Households in the higher income quintiles experience larger absolute financial gains by virtue of their higher earning and spending.

When the gains are expressed as a share of household income, the households in the lower income quintiles experience the larger gains. That is, the trade and investment liberalisation reforms considered in this report are progressive in nature. This means that (as a share of income), lower income households have gained more from the trade and investment liberalisation than higher income households. Households in the lowest income quintile are estimated to have experienced gains equivalent to 12.4 per cent of household disposable income in 2016, versus 11.7 per cent in the case of households in the highest income quintile.

3 Impact of trade and investment liberalisation on Victorian households



Data source: CIE analysis using the GTAP and CIE-Regions models and the ABS HES.

Priorities for future trade and investment liberalisation

There is unlikely to be significant gains from further reductions in tariffs as they are already at, or close to zero, on most imports. However, non-tariff barriers have the potential to limit trade in merchandise goods, and continual effort is required to keep these barriers to a minimum. In particular, the Australia anti-dumping system is increasingly being used to restrict international trade, and, should be reviewed.

This report suggests that trade in services have made a significant contribution to Victorian wellbeing over the past 30 years. While some liberalisation of service trade has occurred, there are still significant barriers to service trade in many sectors of the economy, such as those relating to:

- *the Australian education sector*
- *international Air Service Agreements*
- *the ability of foreigners to obtain Australian visas*
- *postal and courier services*
- *the logistics industry.*

Reforming barriers to trade in services should be a priority for the Victorian and Australian Governments. However, policies in these sectors that restrict trade take many forms, and are usually justified on the idiosyncrasies of the individual industries. Therefore, in each case further investigation is needed to determine whether the existing barriers are justified, or should be reformed.

Australia has relatively high barriers to foreign direct investment compared to other OECD countries. Restrictions are primarily in the form of screening and approval mechanisms that are placed on foreign investment, but also include equity restrictions in a number of Australian industries. Placing restrictions on foreign direct investment limits the level of foreign investment in Australia, reduces the productivity of Australian workers and sees the economy being smaller than otherwise. Reducing barriers to foreign direct investment should be a priority for Australian governments.

Introduction

Australia has a long history of undertaking economic reforms aimed at realising a more flexible and resilient economy. In 1948 Australia became a founding member of the General Agreement on Tariffs and Trade (GATT), the multilateral organisation overseeing the global trading system prior to the establishment of the World Trade Organization (WTO) in 1995. And throughout the 1970s, 1980s, 1990s and into the 2000s, Australia has embarked upon unilateral, bilateral and multilateral trade and foreign investment liberalisation.

This report estimates the impact of trade and investment liberalisation on the Victorian economy, as well as how the incidence of the trade and investment liberalisation varies across different Victorian households. It extends two previous reports prepared for the Australian Department of Foreign Affairs and Trade in 2009 and 2017 that estimate the impact of trade reforms at a national level.¹

Other than providing a more detailed focus on the Victorian economy and considering the distributional impacts of liberalisation, this report extends the previous analysis by including liberalisation of foreign direct investment and some areas of service trade (in education and tourism).

The report is structured as follows. Chapter 1 describes the extent of Australia's trade and investment liberalisation, and our growing global integration. Chapter 2 describes the approach used to model the effects of Australian trade and investment liberalisation. The main modelling results are presented in chapter 3, which include the impact of each type of liberalisation, as well as how these impacts vary across different sectors of the economy. In chapter 4 these results are broken down by different household types to provide an assessment of the distributional impacts of trade and investment liberalisation. Chapter 5 discusses Australian trade and investment liberalisation going forward.

The report contains six appendices that provide more technical detail on each of the major liberalisation reforms considered in this report and the economic modelling approach. Appendix A provides detail on the Australian tariff schedule. Appendix B details the methodology used to estimate the impact of reforms to air services on international flights, as well as how this is translated into a change in service exports. Appendix C describes the methodology used to estimate the impact of barriers to foreign direct investment (FDI) on the stock of inward FDI. Appendix D looks at the history on international education in Australia, and the data sources used to estimate the impact of full fee student in Australia. Appendix E describes the economic modelling methodologies, while appendix F provides additional distributional analysis.

¹ See CIE (2009), *Benefits of trade and trade liberalisation*, report prepared for the Department of Foreign Affairs and Trade, May 2009; and CIE (2017), *Australian Trade Liberalisation: Analysis of the Economic Impacts*, report prepared for the Department of Foreign Affairs and Trade, October 2017.

1 Australian trade and investment liberalisation

Australia has pursued merchandise trade, service trade and foreign direct investment liberalisation through several avenues including unilateral liberalisation, regional or bilateral liberalisation, and multilateral liberalisation under the auspices of the GATT and then the WTO. In the case of merchandise trade, tariffs are the primary mechanism of industrial protection, and so liberalisation can be traced to the gradual removal of these tariffs. In the case of investment and services trade, protection is based on restrictions and conditions placed on these trade and investment flows. As such, understanding the history of reform in these areas requires a careful tracking of policy changes in these areas.

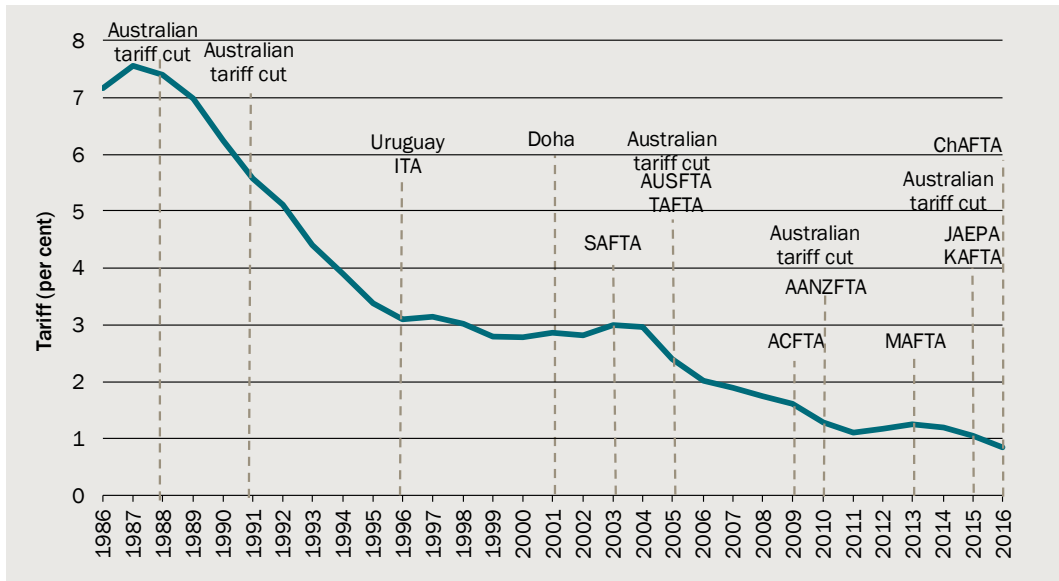
This chapter examines the history of merchandise trade, service trade and foreign investment liberalisation, while the following chapter discusses how such liberalisation has been incorporated into an economic modelling exercise to quantify the economic impacts of Australian trade and investment liberalisation.

Merchandise trade liberalisation

Over the 1986–2016 period, the average (import weighted) tariff rate applied in Australia is estimated to have fallen from over 7 per cent in 1986 to less than 1 per cent in 2016. Individual tariff lines have declined from a maximum of nearly 90 per cent down to a maximum of 5 per cent; however, most tariff lines are duty free. In 2016, 79 per cent of all Australian imports (by value) attracted no tariff. Almost half of all product categories were tariff free for all countries, with least developed countries enjoying tariff free access to the Australian market for all goods.

Chart 1.1 shows the falling average Australian tariff over time. Appendix A provides a discussion of the detail and complexity of the Australian tariff schedule(s), and the challenges in estimating the effective tariff rate applied to Australia's imports.

1.1 Estimated Australian average (import weighted) tariff rate

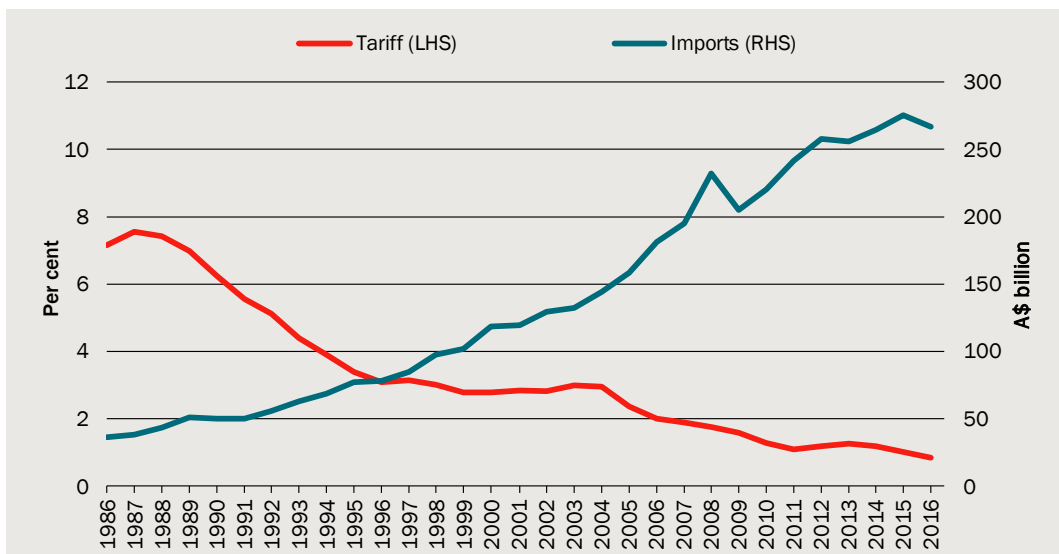


Note: ITA = Information technology agreement, SAFTA = Singapore-Australia FTA, AUSFTA = Australia-US FTA, TAFTA = Thailand-Australia FTA, ACFTA = Australia-Chile FTA, AANZFTA = ASEAN-Australia-New Zealand FTA, MAFTA = Malaysia-Australia FTA, JAPEA = Japan-Australia Economic Partnership Agreement, KAFTA = Korea-Australia FTA, ChAFTA = China-Australia FTA. Economywide tariff cuts indicated here exclude the TCF and PMV industries. Tariff reductions in these industries followed a different schedule (see box A1C.4 in appendix A).

Data source: CIE calculations based on ABS Cat. No. 5368 (Table 2), and Budget Paper No. 1 in various Budgets (www.budget.gov.au/past_budgets.htm).

The period of declining tariffs has coincided with increased merchandise imports. Chart 1.2 shows the value of merchandise imports over time alongside Australia’s (import weighted) average tariff rate.

1.2 Falling tariffs and increasing merchandise imports



Data source: ABS Cat. No. 5368.0 (Table 2) and CIE calculations based on ABS Cat. No. 5368 (Table 2), and Budget Paper No. 1 in various Budgets (www.budget.gov.au/past_budgets.htm).

Aside from some volatility around the time of the 2008 Global Financial Crisis, merchandise imports have increased quite consistently over the 30 year 1986–2016 period; growing at an average annual rate of 7 per cent.

Service trade liberalisation

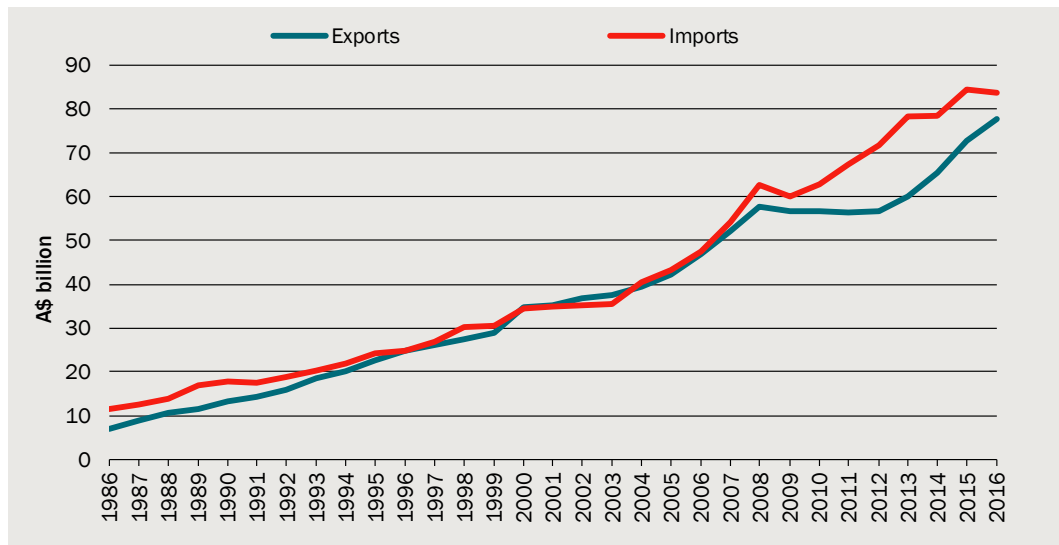
In contrast to merchandise trade, which sees the physical movement of goods across national borders, the World Trade Organization has identified four ‘modes’ through which service trade can occur, namely:

- cross border supply (Mode 1) — services are delivered from the territory of one country into the territory of another country (for example, an Australian firm who sells insurance to consumers residing in Indonesia)
- consumption abroad (Mode 2) — where an individual or firm provides services to an international visitor (for example, tourism services provided within Australia to visiting New Zealand tourists)
- commercial presence (Mode 3) — where a service provider sets up operations in a foreign country (for example, an Australian bank opening a branch in China)
- presence of natural persons (Mode 4) — where an individual offers their services while in the destination country (for example, an Australian IT consultant traveling to India to fulfil a contract).

Given these modes of service delivery, Australian service liberalisation could see both an increase in service imports, and an increase in service exports. For example, allowing foreign financial institutions to open branches in Australia would be associated with increased financial service imports (delivered via commercial presence), while opening Australian education to foreign students would be associated with an increase in education exports (delivered via consumption abroad).

Trends in Australian service trade in (as measured in the Balance of Payments) are shown in chart 1.3. As can be seen, both service exports and imports have grown by around 700 per cent between 1986 and 2016.

1.3 Australian service trade



Data source: ABS 5368.0 Table 2 and CIE calculations.

Estimating the impact of service trade liberalisation poses some specific challenges.

- Unlike merchandise trade, which is typically measured at country borders for customs purposes, there is no such automatic measurement of services trade.
- The Balance of payment approach, which the ABS uses to measure trade, does not capture service trade through commercial presence (Mode 3) nor all of trade via presence of natural persons (Mode 4).
- The regulatory barriers to services trade are specific to each industry, and are much harder to quantify than tariffs.
- Significant technological trade (such as the development of the internet) has radically changed the nature of cross border trade in some service industries during the 1986–2016 period.

Given these challenges, the CIE has not attempted to estimate the effect of liberalisation in all areas of service trade. Instead, this report focuses on two large policy reforms that have occurred over the 1986–2016 period and which can solely be attributed to Australian Government actions. Namely, the opening of Australian universities to full fee paying international students, and the progressive liberalisation of Australian Air Service Agreements.

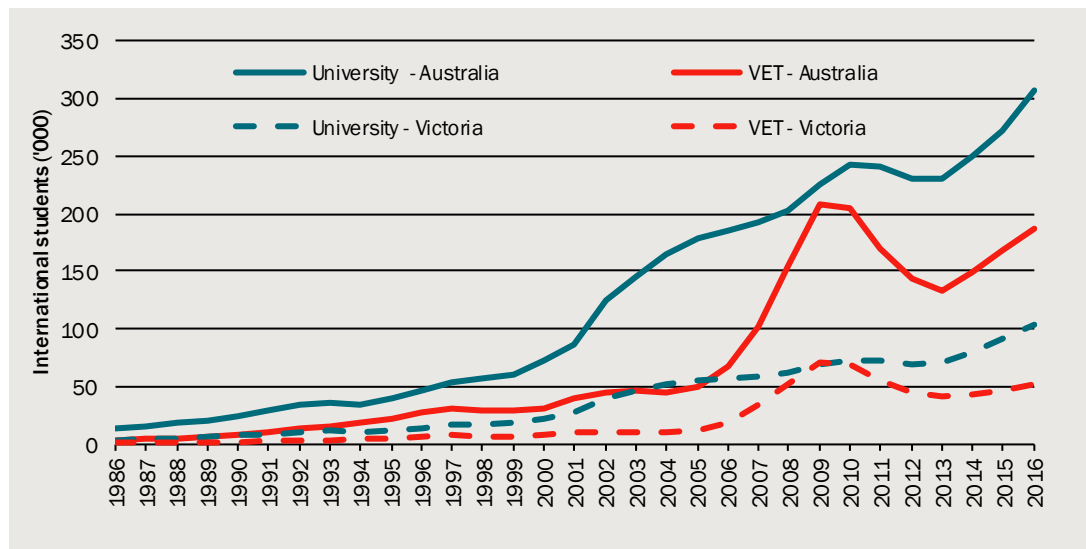
These reforms were chosen because they effect relatively large shares of Australian service trade (travel for education and tourism, and passenger transport services, together comprise around 60 per cent of tourism exports over 1986–2016). The reforms were also chosen because there were distinct Australian policy reforms that could be quantitatively measured. Nevertheless, by excluding the rest of the service sectors, the estimates of the gains from service liberalisation in these areas will necessarily underrepresent gains from liberalisation of wider service trade. Moreover, the reforms to Air Service Agreements only represent one area of policy reform that influence international tourism. Other impacts, such as changes to visa requirements for tourists and the privatisation of Australian airports are not considered.

International students in Australia

Allowing Australian universities to charge the full cost of an education to international students was first announced in parliament in 1985, with the first full fee international students commencing in 1987. It can be seen from chart 1.4 that over the 1986 to 2016 period, international university and VET students in Australia increased by some 2714 per cent, from nearly 18 000 in 1986 to over 494 000 in 2016. International education has gone from having a focus on development and diplomacy, to being a major export industry, accounting for 6.5 per cent of total Australian merchandise and service exports in 2016.

International education has been particularly important for the Victorian economy, with 34 per cent of international university students and 28 per cent of international VET students studying in Victoria.

1.4 International students studying in Australia and Victoria



Data source: NCVET (2017), 'Historical time series of government-funded vocational education and training from 1981 to 2016', Department of Education and Training (2017), 'International Student Enrolments in Australia 1994–2016', Meadows, E. 2011, From Aid to Industry, chapter in Davis, D. and Mackintosh, B. 2011, Making a difference: Australian International Education, UNSW Press.

An increased number of international students increases the level of educational exports, which include educational fees, as well as exports of other goods and services reflecting money spent by students while in Australia (on things like food, leisure activities and accommodation). An increased number of international students will also change the domestic labour force, as a proportion of international students work while studying in Australia.

Air Service Agreements

The second area of service trade liberalisation examined looks at changes to Australia's Air Service Agreements (ASAs) over the period 1986–2016. These agreements regulate the international routes that airlines are allowed to operate, and cover a range of issues such as which cities the airlines are allowed to fly to, the number of flights allowed, seat

capacity, which airlines are allowed to fly these routes, price setting and arrangements for air freight.

Over the last 30 years, Australia has progressively signed more liberal ASAs that have allowed for:

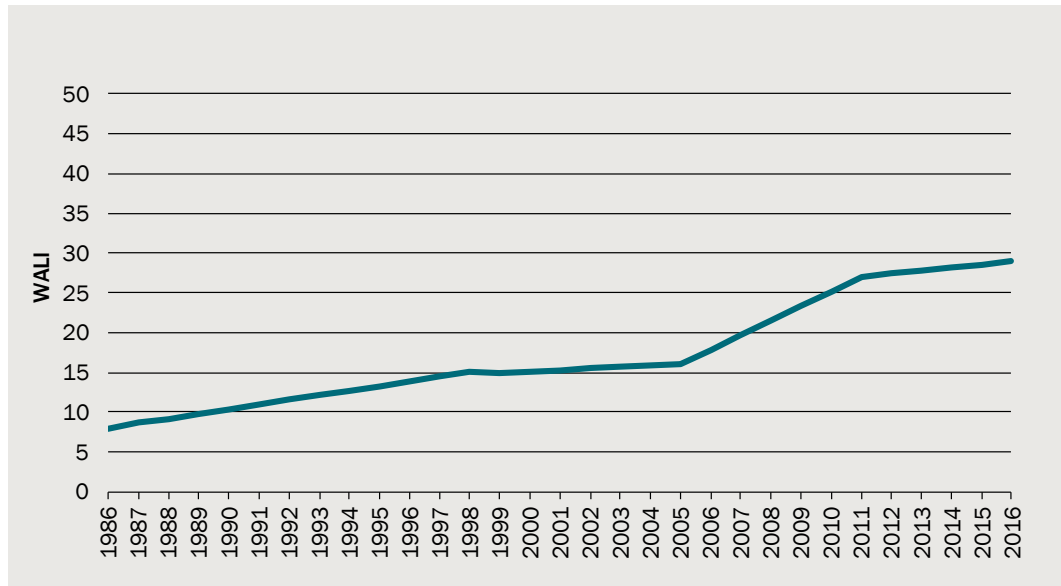
- ‘multiple designation’, which allows Australia’s international airline routes to be shared between more than one carrier (prior to 1992, QANTAS was the sole Australian carrier)
- more use of ‘intermediate’ and ‘beyond’ rights, which allow airlines to carry traffic between two other countries provided the flight originates or terminates in its home country
- a higher level of international ownership of Australian airlines flying international routes
- uncapped capacity on certain routes
- airlines to set tariffs without consulting the other country
- the freer use of code sharing with international partners.

One particularly notable example of international liberalisation in this era is the agreements signed with New Zealand in 1996 and 2000. The final form of the ASA with New Zealand removed all restrictions on flights ‘to’, ‘within’ and ‘beyond’ the other country. New Zealand is the largest Australian market for international flights, with 19 per cent of all short-term visitors arriving in 2016 from New Zealand.²

Researchers at the World Trade Organization have developed a methodology for measuring the restrictiveness of air service agreements, known as the Weighted Air Liberalisation Index (WALI). This index ranges from 0 to 50, with 0 being the most restrictive agreement, and 50 being the most liberal. The air service liberalisation trend for Australia can be seen in chart 1.5, and shows that Australia has agreed to more liberal ASAs over 1986–2016.

² BITRE aviation statistics. Available at <https://bitre.gov.au/statistics/aviation/>

1.5 Weighted Air Liberalisation Index values for Australia

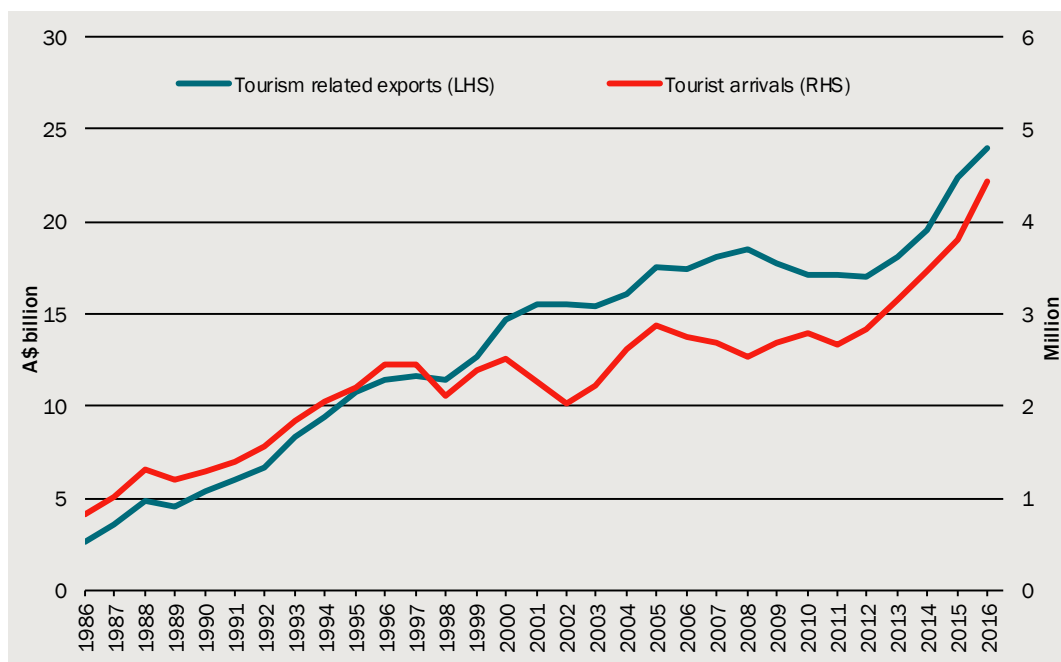


Data source: Data are compiled from various sources. The full methodology used is contained in appendix B.

The relationship between the WALI and airline flights has been the subject of several econometric studies, which are discussed in appendix B. Based on these studies, it is estimated that reforms to ASAs have increased the number of flights (and hence seat capacity, and tourists) into and out of Australia by around 8.5 percent.

Over the period 1986–2016, Australia has seen a significant increase in international tourist arrivals and tourism exports. These trends are shown in chart 1.6, where passenger numbers include short term entrants for holidays and visiting friends and family (but exclude those visiting for work or employment).

1.6 Tourists visiting Australia and tourism exports



Data source: ABS Cat. No. 5368.0 International Trade in Goods and Services, Table 11a. ABS Cat. No. 3401.0 Overseas Arrivals and Departures, Table 6.

Foreign direct investment liberalisation

From the early 2000s bodies such as the Organisation for Economic Co-operation and Development (OECD) and the United Nations Conference on Trade and Development (UNCTAD) have been conducting research into barriers to inward FDI.

The estimation of FDI barriers by the OECD and UNCTAD is based on an approach developed by Stephen Golub for the OECD.³ This approach saw overall FDI restrictiveness being measured on a 0–1 scale, with 0 representing full openness and 1 a de facto or actual prohibition of FDI. Several types of FDI restriction were identified — equity (ownership) limits, screening and approval requirements, restrictions on key foreign personnel, and various other restrictions — with weights being assigned to each type of restriction as evidenced by importance. For example, equity restrictions receive a significant weight — if there is a ban on foreign ownership then other restrictions become irrelevant/obsolete. Golub’s approach, which was later adopted by UNCTAD, determines FDI barriers at the sectoral level (and by type of restriction), which can then be aggregated up to a country level score.

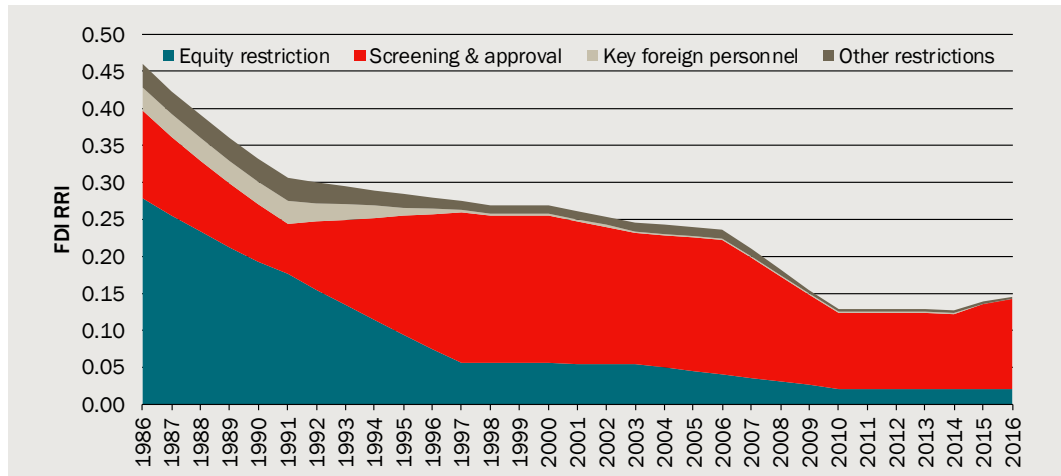
While not without its limitations, the OECD’s FDI Restrictiveness Index provides the currently best available framework for quantifying restrictions to inward FDI, with the approach having been used by the OECD to quantify FDI restrictions in 35 OECD and 27 non-OECD economies.

Historically, and in comparison to other OECD economies, Australia is considered to have relatively large barriers to inward FDI. According to the OECD’s FDI Regulatory Restrictiveness Index (FDI RRI), in 2016 Australia had the fifth most restrictive FDI environment (index score of 0.146) of the 35 OECD members, with Canada (0.166), Iceland (0.167), Mexico (0.193) and New Zealand (0.240) having larger barriers to inward FDI. Luxembourg is considered to be the most open economy to FDI (index score of 0.004 in 2016).

As can be seen from chart 1.7, prior to 1993 equity (ownership) restrictions were the major Australian barrier to inward FDI. As foreign ownership restrictions (continued) to be liberalised, FDI approval and screening requirements increased and have become the main type of barrier used by Australia to restrict/control inward FDI. Over the 1986 to 2016 period Australia’s FDI RRI has fallen by 68 per cent, from 0.46 in 1986 to 0.15 in 2016.

³ Golub, S. (2003), *Measures of Restrictions on Inward Foreign Direct Investment for OECD Countries*, OECD Economic Studies, No. 36, Paris, OECD.

1.7 Estimated Australian barriers to inward FDI

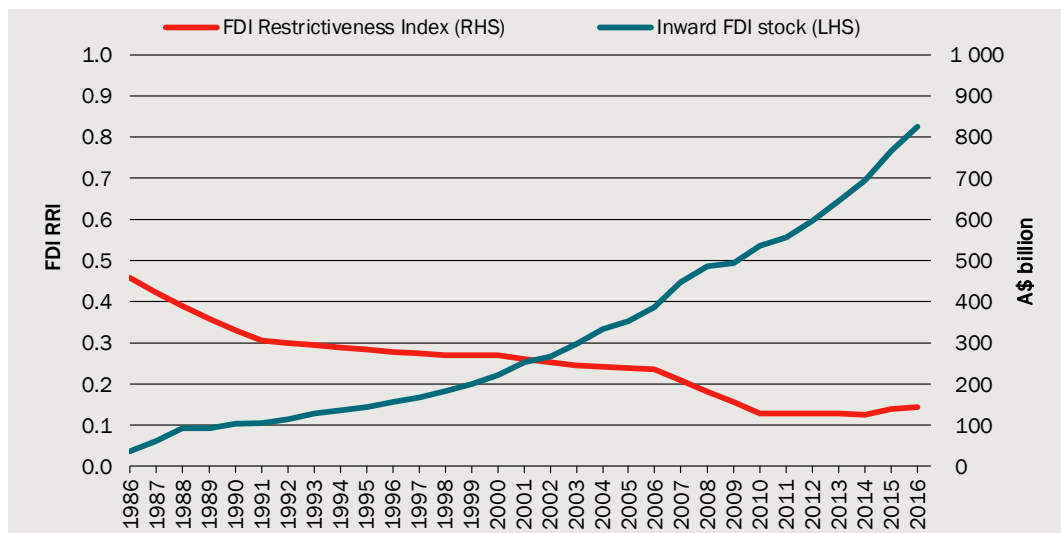


Note: The OECD's FDI restrictiveness Index ranges between 1 (total prohibition of inward FDI) and 0 (FDI is treated exactly the same as domestic investment).

Data source: Golub (personal communication) and OECD online FDI Regulatory Restrictiveness Index.

Australia's lowering of its barriers to FDI has coincided with a period of sustained FDI inflow. As can be seen from chart 1.8, in 1986 the stock of inward FDI was valued at A\$38 billion, versus A\$825 billion in 2016. Over the 30 year period the stock of FDI in Australia grew by over 2080 per cent. The causal relationship between the FDI RRI and the level of inbound FDI in a country is explored in appendix C.

1.8 Falling barriers and increasing stock of foreign investment



Data source: Golub (personal communication), OECD online FDI Regulatory Restrictiveness Index, and ABS 5302.0 Table 27.

Liberalisation and increasing global integration

Over the 1986 to 2016 period the Australian economy has grown, with (current) GDP increasing from A\$261 billion to A\$1655 billion. As the Australian economy grows it could be expected to 'pull in' more imports and foreign investment irrespective of any

trade and investment liberalisation. That is, increased trade and investment volumes are both a driver and consequence of economic growth.

However, when measured as a share of GDP, it is clear that Australia's liberalisation of merchandise trade, service trade and foreign investment has coincided with trade and FDI becoming increasingly important parts of the Australian economy.

Chart 1.9 shows how merchandise imports, total service trade (imports plus exports) and inward foreign direct investment are becoming increasingly important parts of the Australian economy. As a share of GDP, merchandise imports have increased from being equivalent to 14 per cent of GDP in 1986 to 16.1 per cent of GDP in 2016. Service trade has increased from 7.1 to 9.8 per cent of GDP, while the inward FDI stock has increased from 15 per cent of GDP in 1986 to 50 per cent in 2016. The increasing shares mean merchandise imports, total service trade and inward FDI have all grown faster than GDP.

1.9 Increasing global integration



Data source: ABS Cat. Nos. 5206.0 (Table 3) and 5368.0 (Table 2), and CIE calculations.

Liberalisation and the Victorian economy

International liberalisation has had a different impact in each Australian state and territory. This impact varies based on the different industry specialisations of each state, as well as the extent of trade exposure in each region.

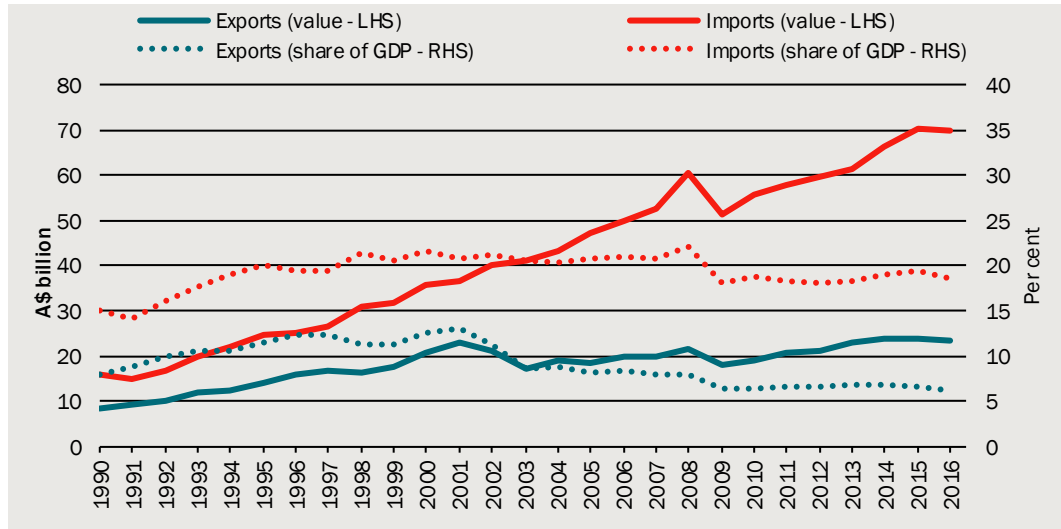
Chart 1.10 shows that merchandise imports into Victoria have increased significantly in the period since 1990⁴, both in absolute terms, and as a share of Victorian GDP.

Merchandise exports have also increased in value, but have decreased a share of the Victorian economy. This likely reflects the reorientation of the Victorian economy from a

⁴ ABS data on imports and exports by state goes back to 1990 for merchandise trade, and to 1999 for service trade.

manufacturing base to a service economy. In 2016, merchandise imports into Victoria were three times the size of its exports.

1.10 Trends in Victorian merchandise trade

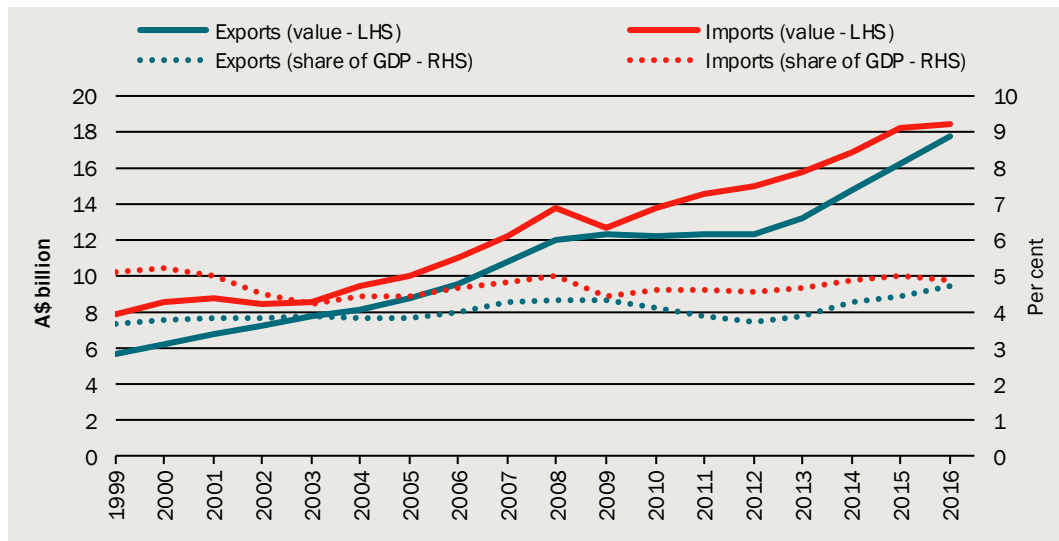


Data source: ABS 2017, International Trade in Goods and Services, Table 15a.

Over the same period, merchandise imports into the rest of Australia have increased from 16 to 19 per cent of GDP. Merchandise exports are more important to/larger in other Australian states and territories, accounting for 20 per cent of GDP in 2016 (versus 6.2 per cent in the case of Victoria). Mining exports would be a driving factor here.

Chart 1.11 shows the trends in trade services in Victoria over the period 1999–2016. Both imports and exports have increased in value over this period, by 212 and 133 per cent respectively. Service exports have grown faster than Victorian GDP, which has seen service exports increasing as a share of GDP, while service imports have stayed at relatively constant share of GDP. Over the same period in other Australian states and territories, service exports have decreased as a share of GDP (from 6 to 5.4 per cent of GDP), with service imports also decreased slightly as a share of GDP (from 6.2 to 5.7 per cent of GDP).

1.11 Trends in Victorian services trade 1999-2016



Data source: ABS 2017, 5368.0.55.004 - International Trade: Supplementary Information.

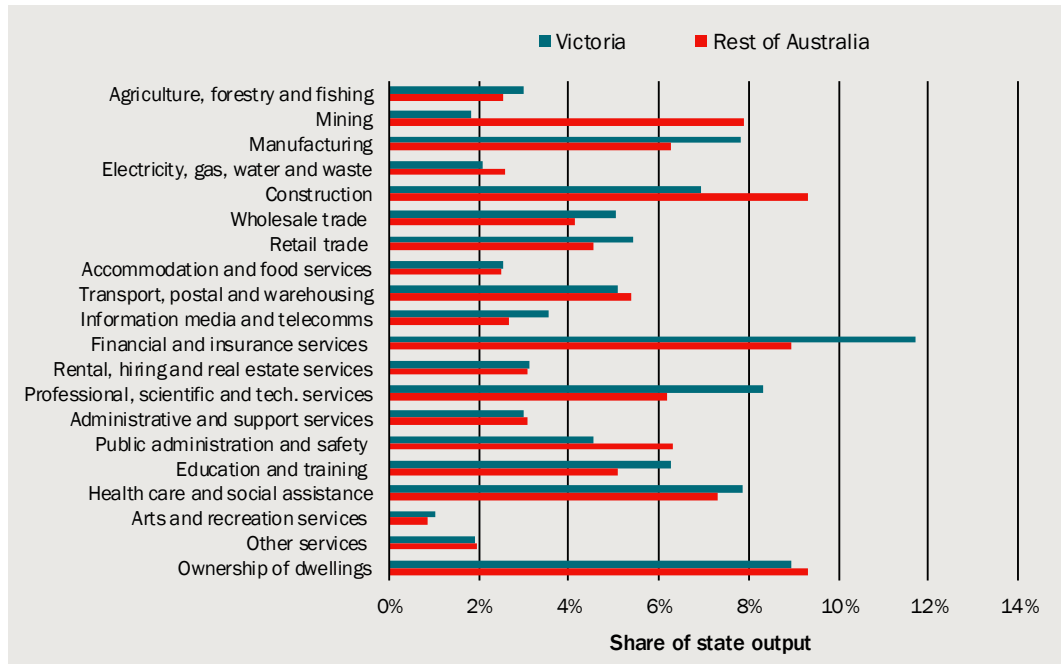
Combining both merchandise and service trade, Victoria has increased total exports from \$23 billion in 1999 to \$41 billion in 2016, and increased imports from \$40 billion in 1999 to \$88 billion in 2016. Over the same period, imports into the rest of Australia have increased from \$80 billion to \$342 billion and exports have increased from \$80 billion to \$320 billion. This means that in 2016, Victoria accounted for a smaller share of Australian exports (11 per cent) than imports (20 per cent).

The historical trends observed in the charts are driven by a range of factors, including technological change, changing consumer tastes, trade and investment liberalisation, and a range of other domestic and international economic reforms. Such factors have also shaped the Victorian economy, and in 2016 the Victorian economy is different to that in other Australian states and territories.

Chart 1.12 shows the industrial output of the Victorian economy in 2015-16. This shows that relative to the rest of Australia, Victoria has a higher share of output in the manufacturing sector, as well as the financial services, professional scientific and technical services and educational services. On the other hand, Victoria has a lower share of output in the mining, construction and public administration industries.

The differing trade intensities and composition of the Victorian economy means it will be impacted differently to the other Australian states and territories (on average) by the trade and investment liberalisation.

1.12 Industry shares of state output



Data source: ABS National Accounts: State Accounts 2016/17. Catalogue Number 5220.0.

2 *Modelling the effects of Australian trade and investment liberalisation*

The contribution of Australian trade and investment liberalisation between 1986 to 2016 to the Australian economy has been quantified through an economic modelling exercise. Three types of liberalisation have been taken into account, these being:

- lowering of Australian tariffs applied to merchandise imports
- the opening up of Australian tertiary education to foreign students and liberalisation of air travel to Australia
- reducing Australian barriers to inward foreign direct investment.

Importantly, only liberalisation undertaken by Australia has been considered; any liberalisation undertaken by Australia's trade and investment partners has been excluded. Also excluded is the lowering/elimination of non-tariff barriers to trade, and liberalisation of other service trade. As such, the economic modelling results (see chapter 3) can be considered to be a lower bound of what has resulted from Australia's overall process of trade and investment liberalisation over the 1986–2016 period.

The trade and investment barriers used in the economic modelling simulation is discussed below.

Tariffs applied to merchandise imports

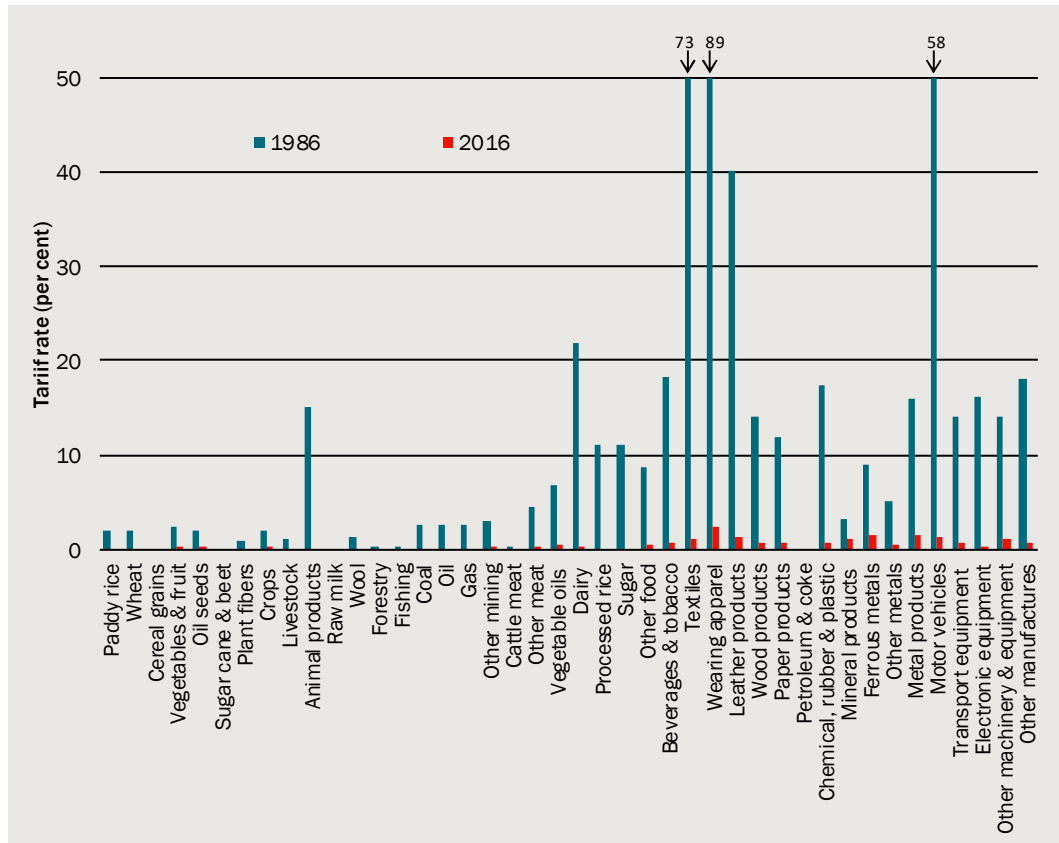
As already noted, over the last three decades Australia has undertaken substantial merchandise trade liberalisation — in 2016 the average (import weighted) Australian tariff levied on merchandise imports was under 1 per cent, versus over 7 per cent in 1986.

However, and as can be seen from chart 2.1, these average tariffs mask considerable variation at the product level. In 1986, tariffs, at the aggregated product level, ranged between 0.5 per cent (forestry products) and 89 per cent (apparel products). By 2016 the breadth of tariffs was substantially smaller, ranging between 0 (various primary products) and a maximum of 2.4 per cent (apparel). While the most protected sectors in 1986 are still the more heavily protected sectors in 2016, the magnitude of that protection has been greatly reduced. For example, in the case of wearing apparel, tariffs have fallen from 89 per cent to 2.4 per cent, a reduction in protection of nearly 87 percentage points, while motor vehicle protection has fallen by 56 percentage points.

Removing such large price distortions should be associated with substantial efficiency gains in Australia.

The modelling simulation took account of the fact that over 1986–2016 imports from different countries/regions/country groupings faced differing tariff schedules, reflecting the numerous (and differing) tariff schedules that Australia had in place in each year.

2.1 Ad valorem equivalent tariff rates in 1986 and 2016



Note: Import weights have been used to aggregate across countries facing differing tariff rates (for the same product) to arrive at average tariff rates for the various types of merchandise imports.

Data source: CIE analysis of Australian tariff schedules.

Liberalisation of service exports

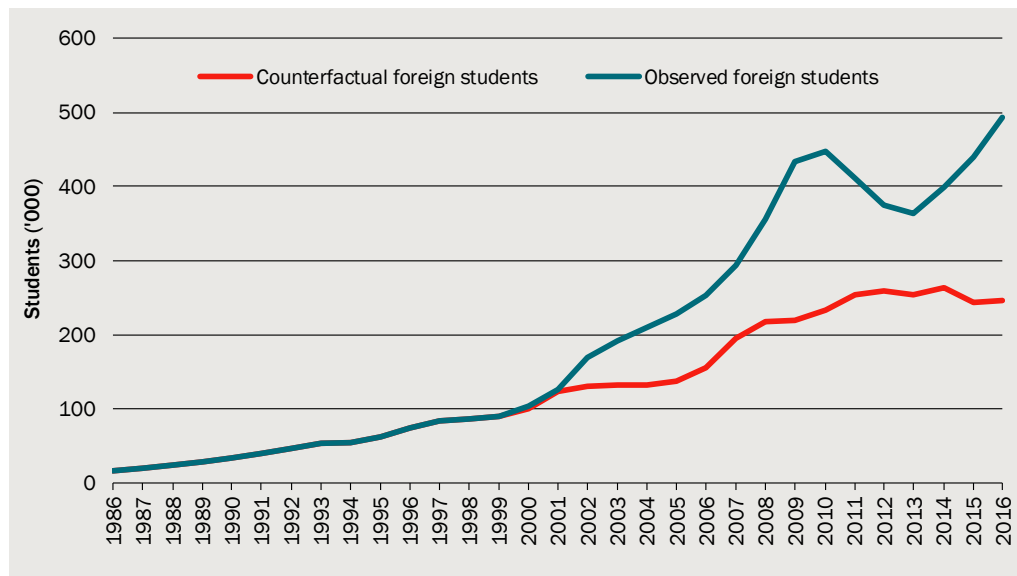
International education

The changes in international education policy relative to the policies in place in 1986 have been used to estimate the impact of education liberalisation. The mid 1980s was a period of transition for the Australian education sector, with policies to allow international students to obtain an Australian education on a full fee paying basis being introduced into the Australian Parliament in 1985, with the first full-fee paying students commencing courses in 1987.⁵

⁵ Meadows, E. 2011, *From Aid to Industry*, chapter in Davis, D. and Mackintosh, B. 2011, *Making a difference: Australian International Education*, UNSW Press.

When full fee paying students were introduced, the total number of international students at Australian universities was capped at ten per cent⁶, although at the time the cap was not binding as international students only accounted for around 3 per cent of students at universities. The (counterfactual) scenario considered here assumes the 10 per cent quota was held in place through to 2016. The scenario also caps the level of international students in the VET sector at 10 per cent. The total number of international university and VET students observed, and those that would have occurred had the cap remained in place (counterfactual scenario) are shown in chart 2.2.

2.2 International university and VET students in Australia



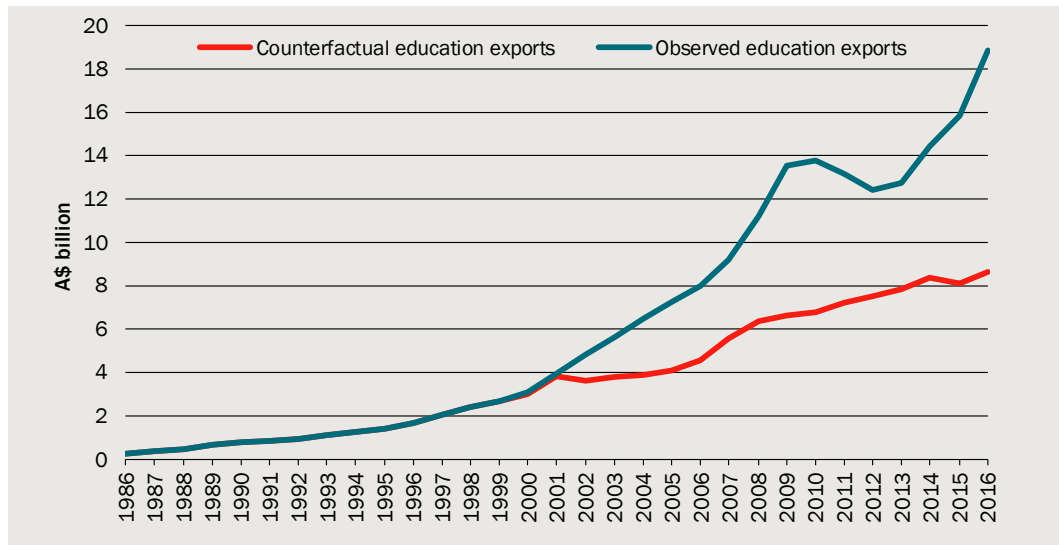
Data source: CIE calculations.

There have been many policy changes in the education sector since 1986 that have influenced the number of international students in Australia, including changes to visa arrangements, pathways to permanent residency and university funding arrangements. Under this modelling approach, these policy changes will be reflected in the observed level of students, but not in the counterfactual. For instance, if visa waiting times for international students are decreased, and this increases the number of international students in Australia, it will increase the gap between the observed level of students and the counterfactual (which is limited to 10 per cent of total students).

Spending by international students whilst studying in Australia gives rise to educational related exports. For example, payment of tuition fees, as well as incidental spending on things such as food, leisure activities and accommodation. A decrease in international student numbers would be associated with a reduction in education related exports. Chart 2.3 shows the expected change in education related exports that would have occurred if the 10 per cent cap was left in place (and under the assumption that a reduction in international student numbers sees the equivalent reduction in education related exports).

⁶ Ibid.

2.3 Australian education exports



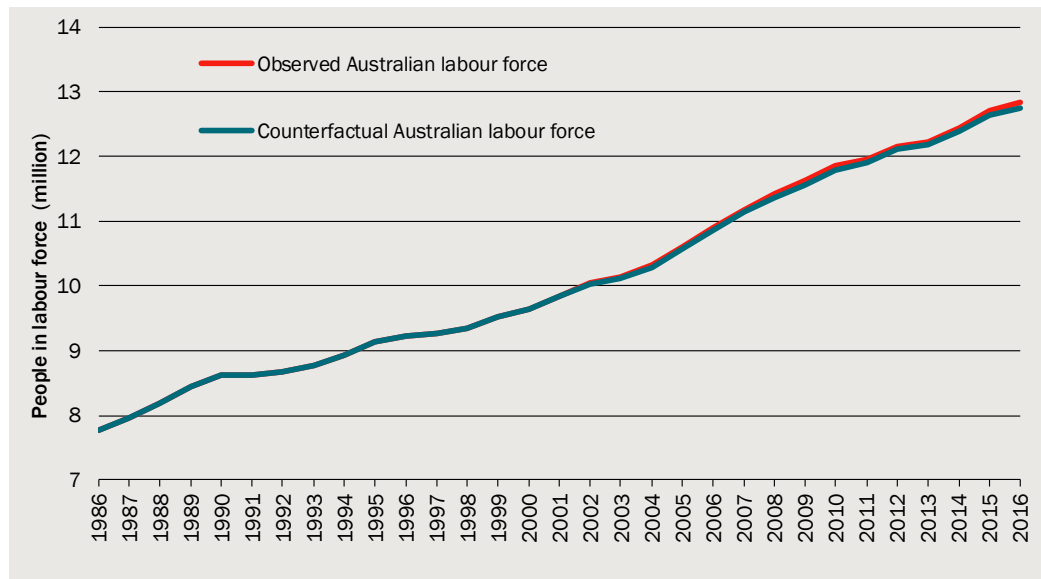
Data source: ABS 5368.0 Service Credits, Table 11, and CIE calculations.

The estimate does not include Australian education providers opening campuses in other countries. It also only covers education in the university and VET sectors, and does not consider English language schools, primary and high schools, and non-award based education.⁷ A full description of the methodology used to estimate the impact of international education on the Australian economy is found in appendix D.

Some international students also work while in Australia, and so a change in the intake of students will also impact on the Australian labour market. Chart 2.4 shows the observed size of the Australian labour force, and the size of the labour force in the absence of education liberalisation (including an adjustment for average hours worked). In 2016, it is estimated that the Australian labour force would have been nearly 0.7 per cent smaller than otherwise in the absence of education liberalisation (and over 0.8 per cent smaller in the case of the Victorian labour force).

⁷ University and VET providers make up the majority of international education exports (around 88 per cent in 2016).

2.4 International students and the Australian labour force

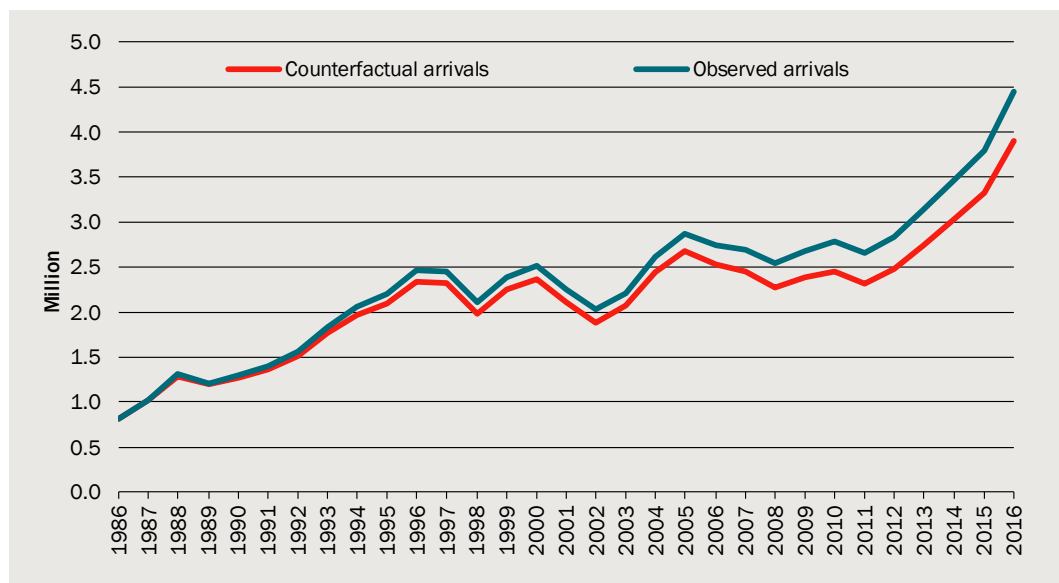


Data source: ABS 6202 and CIE calculations.

Air Service Agreements

Australia signed progressively more liberal ASAs over the 1986–2016 period, which has increased the frequency and lowered the price of international flights into and out of Australia. Based on the methodology described in Appendix B, it is estimated that the liberalising of flights into/from Australia will have increased international passenger numbers into (and out of) Australia by around 8.5 per cent in 2016. Chart 2.5 shows the observed number of tourists arrivals, and that estimated to occur had ASAs not being liberalised (counterfactual scenario).

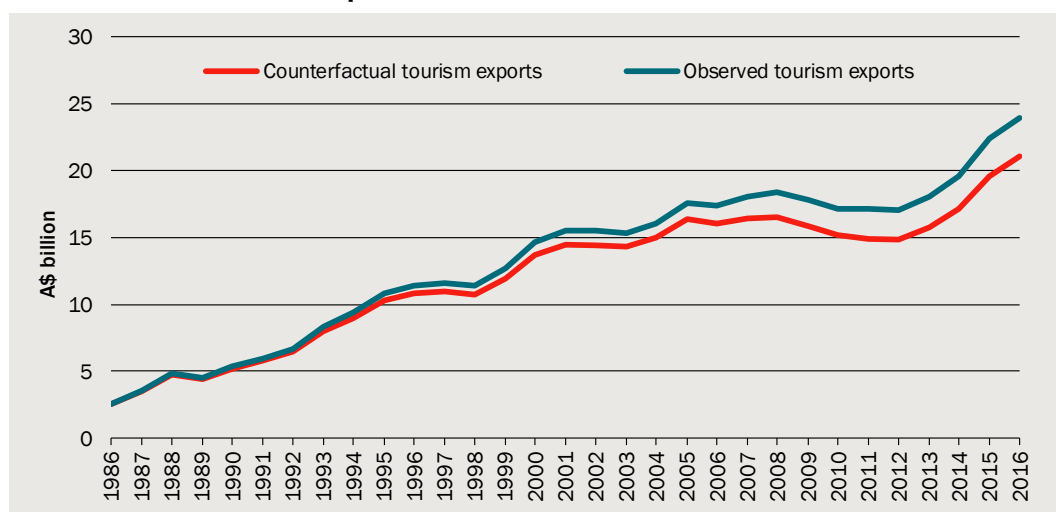
2.5 International tourists flying to Australia



Data source: BITRE Aviation Statistics and CIE calculations.

The increased number of tourists visiting Australia will see greater tourism exports through additional tourist spending on accommodation, restaurant meals, leisure activities, and other tourist related spending. When modelling the counterfactual, tourism related service exports are changed in proportion to the estimated change in number of tourists. The amount of money spent by tourists in different sectors of the economy are based on spending estimates from the International Visitors Survey. The observed level of tourism exports, and the counterfactual scenario (no liberalisation of Australia's ASAs) are shown in chart 2.6.

2.6 Australian tourism exports



Data source: ABS 5368.0 Service Credits, Table 11, and CIE calculations.

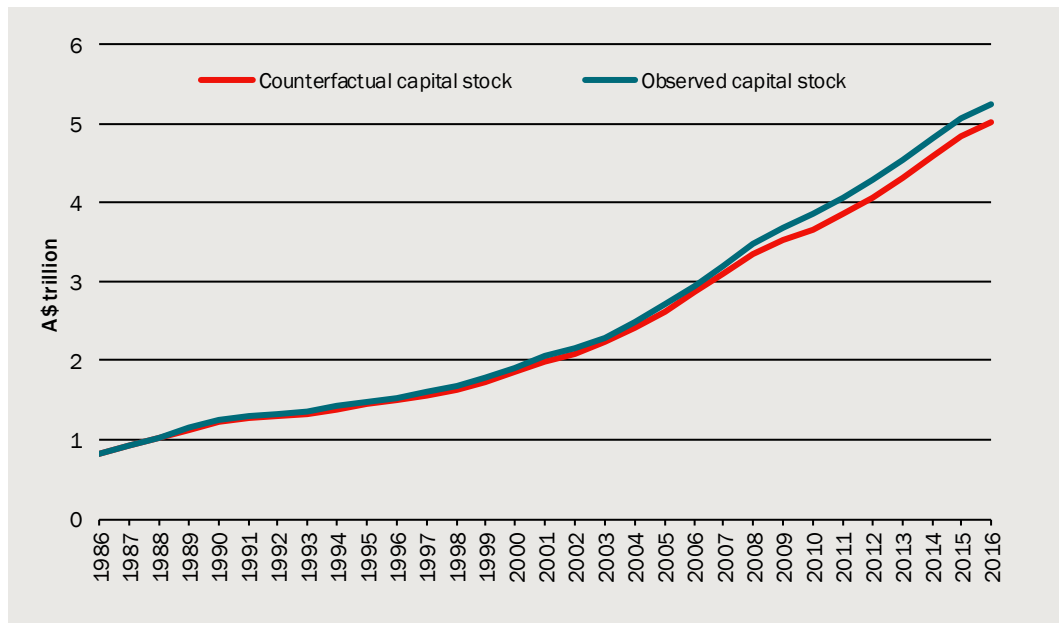
This paper does not consider the effect of increased Australian tourists travelling overseas as a result of the cheaper air travel.

Opening Australia to foreign direct investment

As discussed in chapter 1, Australia has progressively reduced its barriers to FDI over the 1986–2016 period. The relationship between the observed barriers to FDI and the level of FDI into a country is estimated in appendix C. The appendix includes a number of econometric specifications, with the preferred estimate being based on a model with time and country fixed effects.

Based on the preferred (fixed effects) approach, it is estimated that Australia's liberalisation of inward FDI over 1986–2016 has seen the stock of inward FDI being some 37 per cent higher than otherwise. The additional FDI combines with domestically sourced capital, giving rise to a larger capital stock in Australia. From chart 2.7 it can be seen that Australia's FDI liberalisation is estimated to have seen the capital stock being some 4 per cent higher in 2016.

2.7 Change in Australia's capital stock due to FDI liberalisation



Data source: CIE calculations.

A higher level of foreign investment will see some income payments being sent overseas (in order to service the debt). This means that when looking at foreign investment liberalisation, it is important to distinguish between Gross Domestic Income, which includes all income generated in Australia and Gross National Income, which measures the return to Australian production factors (and so excludes income earned by/returned to foreign capital).

Other non-economic consequences of changes in foreign investment such as concerns regarding international control of 'strategic' assets are not considered in this report. The potential for foreign direct investment to drive productivity gains through transfer of knowledge and technology is also overlooked.

3 *Economic modelling results*

Economic modelling of Australian trade and investment liberalisation over the period 1986–2016 has been undertaken to understand its contribution to the Australian and Victorian economies in 2016. The modelling has been undertaken using the GTAP international trade model in conjunction with the CIE-Regions model. Details of the economic analysis methodologies are provided in appendix E. Economic modelling results for the Victorian and Australian economies are reported here, with distributional results being reported in chapter 4.

Summary estimates of the economywide impacts of Australia’s liberalisation over the 1986–2016 period on key economic indicators are shown in table 3.1. These results show that the trade and investment liberalisation has increased the size of the Australian and Victorian economies, and increased consumption of the typical resident, which is a key determinant of welfare.

3.1 Estimated impacts of liberalisation over 1986–2016

Indicator	Victoria	Rest of Australia	Australia
	Per cent	Per cent	Per cent
Real gross domestic product	9.3	7.7	8.1
Real consumption	5.3	4.3	4.6
Real exports	45.5	32.1	34.2
Real imports	31.1	31.3	31.2
Real investment	14.2	12.9	13.2
Real wages	9.3	8.7	8.9
Prices	-3.7	-3.1	-3.3

Source: CIE analysis using the GTAP and CIE-Regions models.

The economic modelling suggests that Victorian real GDP is some \$32 billion, or some A\$5200 per capita, higher than otherwise in 2016 as a result of the trade and investment liberalisation undertaken over 1986 to 2016.

The modelling also suggests that household consumption is around 5 per cent higher as a result of the trade and investment liberalisation. Consumption is generally regarded as a better measure of the welfare gains of a reform compared to changes in GDP. This is because changes in GDP will include income that accrues to foreigners (such as income payments on foreign investment, and wages paid to international students working in Australia).

The modelling also shows that the trade and investment liberalisation has been more beneficial to the Victorian economy than the rest of Australia. This result is driven

primarily by the larger importance of international education to the Victorian economy.⁸ Victoria also benefits slightly more than the rest of Australia from tariff reforms due to the higher proportion of imports used by Victorian consumers and businesses.

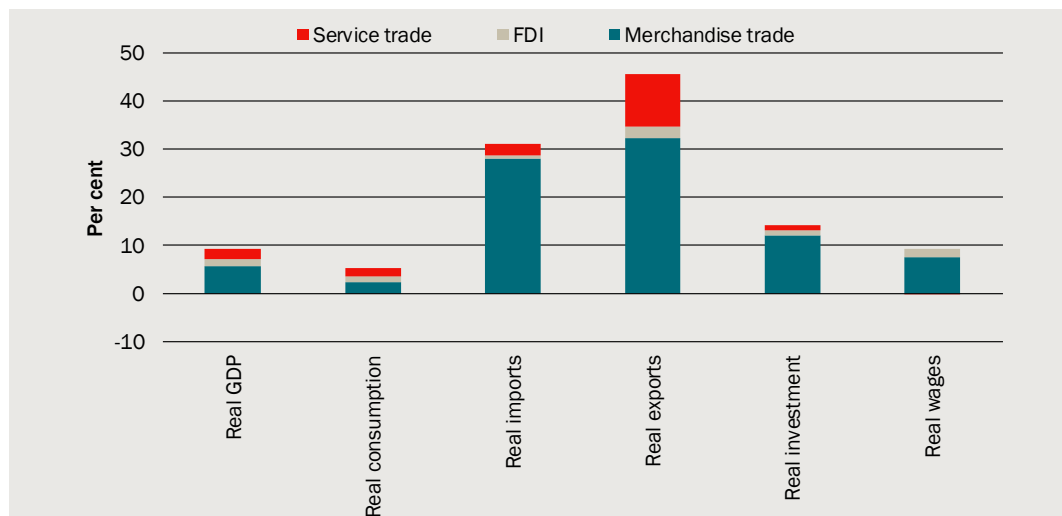
Economic impact of different areas of liberalisation

The three areas of liberalisation considered — merchandise imports, tourism and education service exports (via consumption abroad) and inward FDI — impact on the Victorian economy in different ways.

- Tariff reductions reduce the price that Australian pay for imports, as well as the price that Australian firms pay for imported intermediate goods. Tariff reductions also generate a structural shift in the Australian economy from import competing industries to export industries, which increases the productivity of the Australian economy.
- The services trade reforms examined in this report facilitate the export of Australian services to foreigners, which acts as an effective increase in demand for these goods. This improves the Australian terms of trade, which means that the price of Australian exports increases relative to the price of Australian imports. Increased service exports may also have a positive impact on domestic employment.
- Investment reforms increase the amount of foreign investment in Australia, which, by lowering the cost of capital, increases the output of the domestic economy. It will also increase the productivity and wages of the typical Australian worker.

Chart 3.2 shows the impact of these three areas of liberalisation on key economic indicators for the Victorian economy.

3.2 Impact on Victoria by area of liberalisation



Data source: CIE analysis using the GTAP and CIE-Regions models.

⁸ Services reforms increased Victorian real GDP by 2.1 per cent, but only increased the real GDP for the rest of Australia by 0.6 per cent.

Reforms to merchandise trade represents the largest contribution to each outcome. However, reforms to service represent a 2.1 per cent increase in GDP and investment reforms represent a 1.6 per cent increase in consumption, compared to merchandise trade which is 5.7 per cent. This suggests that only looking at merchandise trade will miss a significant part of the benefits of international liberalisation.

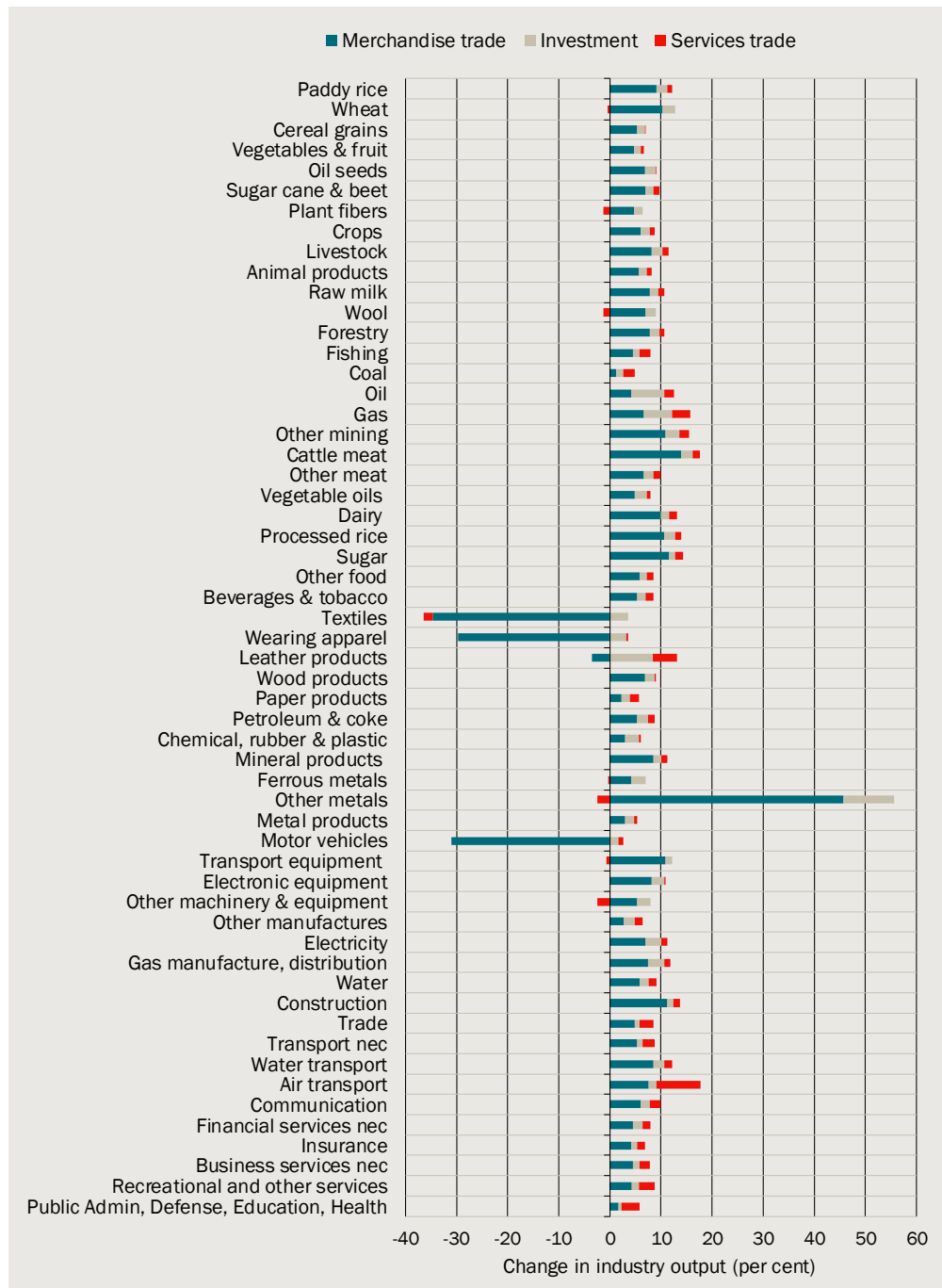
Economic impacts at the sectoral level

The reforms to merchandise trade, services trade and foreign investment will change the structure of the economy, with some industries increasing, and some contracting. The impact from each type of reform on the output of Victorian industries is shown in chart 3.3. As can be seen, output has increased in the majority of sectors, with the largest gains in the 'other metals' sector. Output has contracted in the textiles, wearing apparel and motor vehicles sectors. These are import competing sectors that have traditionally had very large import tariffs (see box A.1 in appendix A), with such tariffs being reduced significantly in past years.

The areas of trade and investment liberalisation considered will also have a strong impact on the level of international trade conducted in each sector. Merchandise trade and service trade reforms directly lower the cost of international trade and will see increase trade flows. Foreign investment will also result in higher trade flows, as the higher level of capital intensity will reduce production costs and make Australia more internationally competitive. Charts 3.4 and 3.5 show the impact on imports and exports (respectively) by sector for the Victorian economy. These charts show significant increases in both exports and imports across most sectors of the economy.

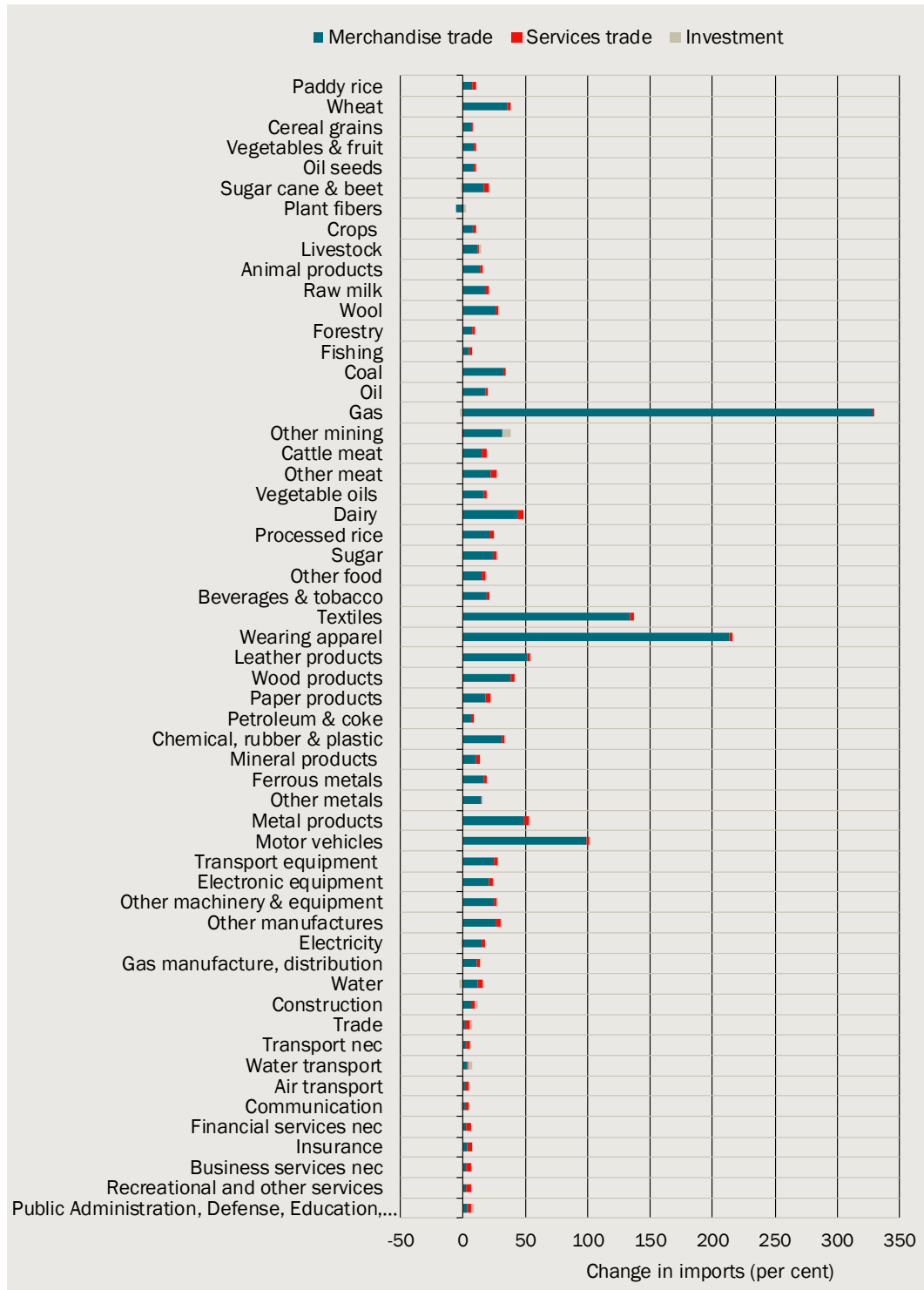
The increase in imports is broadly proportional to the degree trade is liberalised. Imports of agricultural and mining products typically show the smallest change, as these products typically face relatively small tariff reductions in the order of 2–3 percentage points. While agricultural and primary products typically experience the lowest tariff reductions, such imports are often commodity type products, with small price changes leading to large substitution effects from domestic production to imports.

3.3 Change in Victorian sectoral output



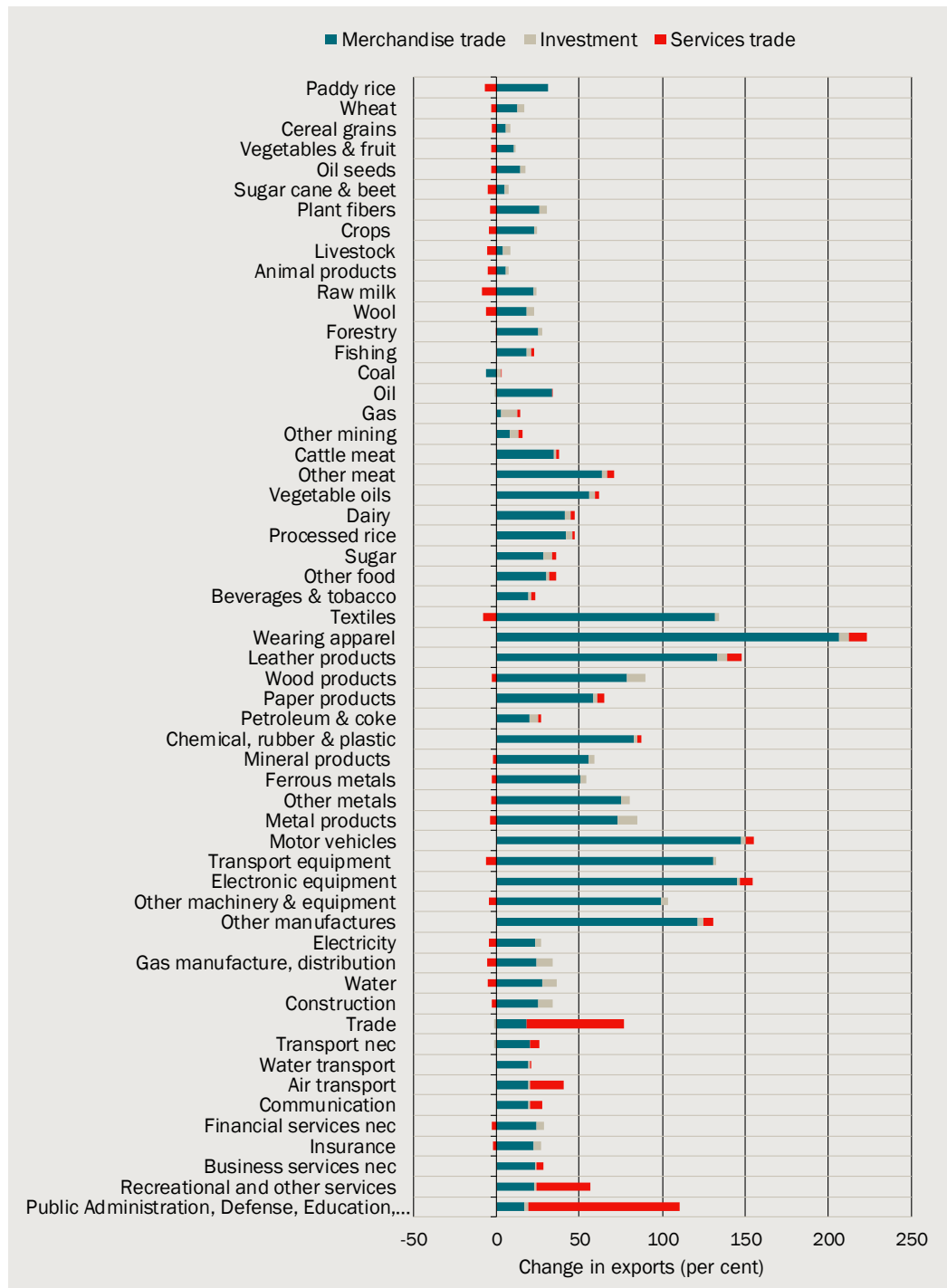
Data source: CIE analysis using the GTAP and CIE-Regions models.

3.4 Change in Victorian imports



Data source: CIE analysis using the GTAP and CIE-Regions models.

3.5 Change in Victorian exports



Data source: CIE analysis using the GTAP and CIE-Regions models.

Imports of foods and most manufactures face tariff reductions in the order of 10–20 percentage points, with imports increasing by up to 50 per cent. Imports of textiles, wearing apparel and motor vehicles are all more than 100 per cent higher than otherwise, reflecting the large tariff reductions for these imports.

The largest gains to exports come in the area of manufactured goods, which is primarily driven by tariff reforms. There is also a significant increase in service exports, which is largely driven by the reforms to services trade. However, it is interesting to note that manufacturing tariff reforms also result in a significant increase in service exports as resources shift from import competing industries to the services sector.

Impact on employment

One way to measure of the impact of trade and investment reforms on employment is to observe the current employment in the Victorian economy, and identify the jobs that have been created due to trade and investment reforms. For instance, in 2016, the air transport industry employed around 9400 people in Victoria, and the modelling done in this paper suggests that the air transport industry would have been 15 per cent smaller in the absence of the reforms covered in this report. This suggests that around 1400 of the existing jobs in this industry have been generated by trade and investment reforms. Similarly, the motor vehicle sector is estimated to have lost around 9200 jobs due to trade and investment reforms over this period.⁹

Using this methodology for all sectors of the Victorian economy results in a net positive impact of around 184 000 jobs, or around 7 per cent of existing Victorian jobs. This is slightly smaller than the impact on Victorian GDP (9.3 per cent), and can be attributed to the fact that the investment liberalisation has resulted in an increase in the capital stock, which has benefitted the capital intensive industries more than the labour intensive industries.

Economic modelling...

It is important to appreciate that economics models, are by definition, a simplification of reality and rely on numerous assumptions about economic relationships, behaviour, and parameter values. One key assumption here is that the modelling has been conducted on a 'long run' basis, which means that capital and labour that are displaced from one industry are able to join other industries. In reality, this process will generate adjustment costs that are incurred by workers and businesses as the economy changes. However, the long run assumption used in the modelling means these adjustment costs are not included in the estimates of the impact of liberalisation.

⁹ This is a low figure compared to the job losses observed in the sector over the period. This is because this is only an estimate of the job losses due to liberalisation, and not other factors such as the automation of production.

4 *Impacts of liberalisation on Victorian households*

Governments typically seek to liberalise their trade and foreign investment regimes to improve economic efficiency, grow economic activity, and deliver greater returns to the country's factors of production (land, labour and capital). However, what is frequently omitted in the liberalisation discussion is that trade affects the prices of consumption goods (for example, clothing, food, cars, electronics) and not just factor incomes. This was noted by (former) Prime Minister Hawke, who highlighted that past tariff protection in Australia had led to:

...inefficient industries that could not compete overseas; and higher prices for consumers and higher costs for our efficient primary producers. Worse still, tariffs are a regressive burden — the poorest Australians are hurt more than the richest.¹⁰

Prime Minister Hawke's point was that the tariffs that support domestic industries are paid for by the consumer through higher prices for both imported and domestic products (compared to if the goods were imported without tariffs, or produced efficiently domestically). The benefit of trade and investment liberalisation is removing this burden on consumers and allowing for efficient resource allocation within the economy.

The economic modelling results have been combined with the ABS's Household Expenditure Survey to estimate the financial impact on households of Australian trade and investment liberalisation over the 1986–2016 period.

The economic modelling results presented in the previous chapter suggest that trade liberalisation leads to increased wages (and other income), and generally lower prices for household goods.

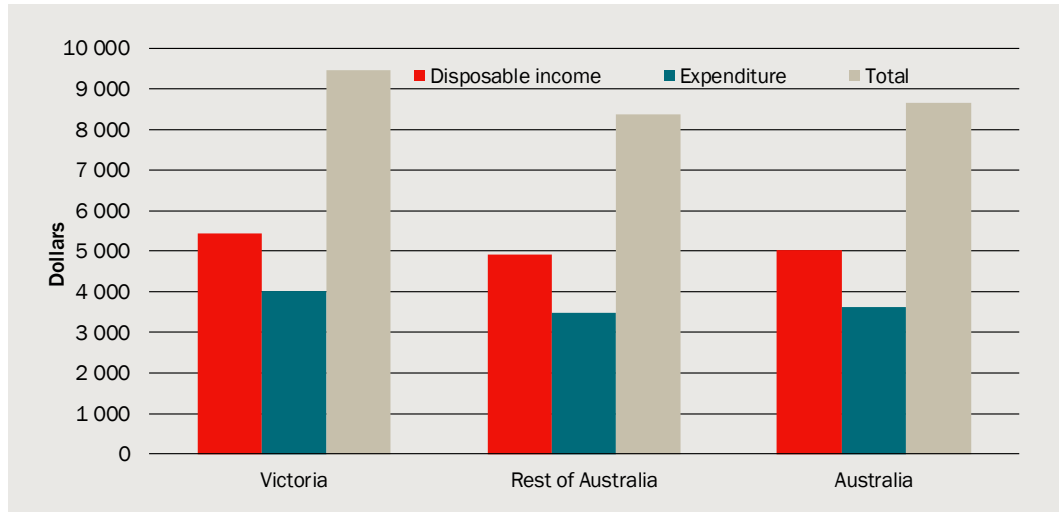
Chart 4.1 provides summary income and expenditure results for the average household. As can be seen, (nominal) household income in 2016 is estimated to be A\$5547 higher for the average Victorian household than it would otherwise have been had the trade liberalisation not taken place.¹¹ Expenditure for the average Victorian household is estimated to be A\$4017 lower due to the liberalisation lowering the cost of goods and services consumed by households.

In aggregate, the trade and investment liberalisation is estimated to have seen the average Victorian household being some A\$9464 better off in 2016. In comparison, the average household in the rest of Australia is estimated to be some A\$8371 better off. Australia wide, the average household is estimated to be some A\$8659 better off in 2016.

¹⁰ Commonwealth of Australia 1991, in Emmery, M. 1999, *Australian Manufacturing: A Brief History of Industry Policy and Trade Liberalisation*, Department of the Parliamentary Library Research Paper No. 7, Canberra.

¹¹ Note that this figure includes wages, capital income and government transfers.

4.1 Impact in 2015-16 of liberalisation on the average household



Data source: CIE analysis using the GTAP and CIE-Regions models and the ABS HES.

The impact of liberalisation on Victorian households

The trade and investment liberalisation will impact households differently, depending on the source of household income (for each quintile) and the intensity with which households consume differing goods and services.

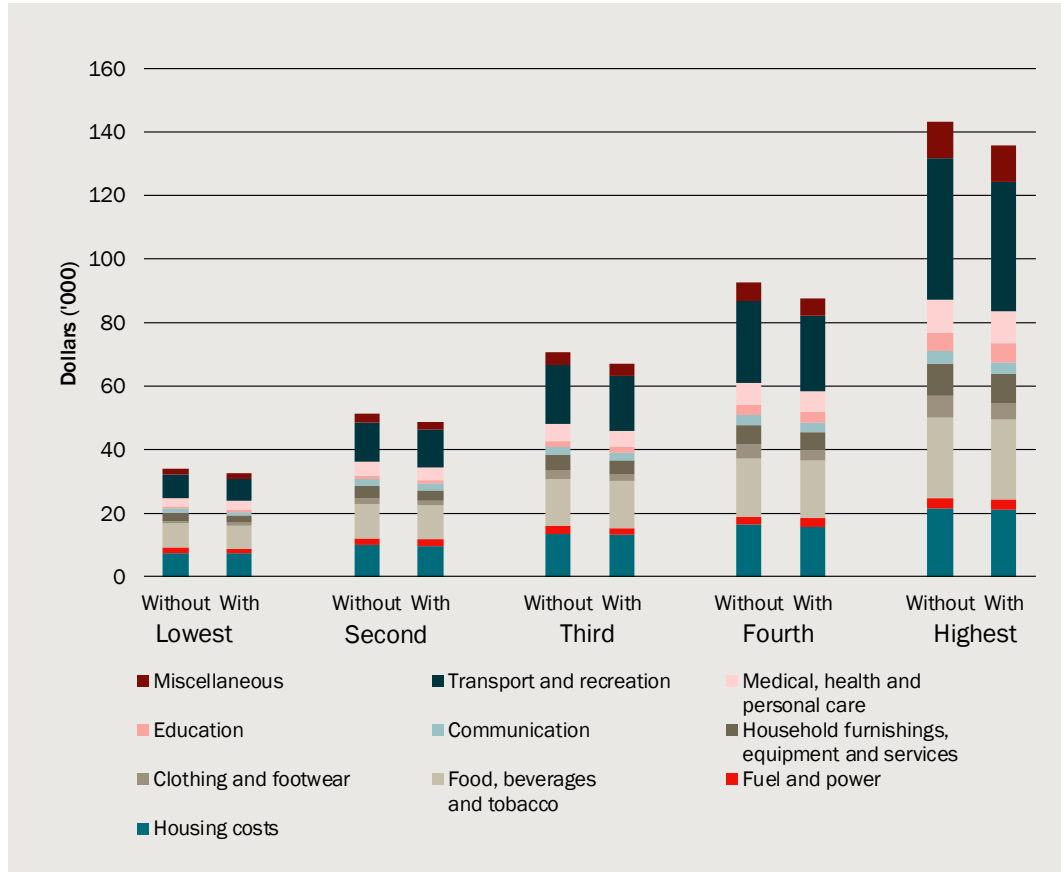
Chart 4.2 shows expenditure by expenditure category for Victorian household across income quintiles as observed in 2015-16 (With liberalisation), and what that expenditure would have been in the absence of trade and investment liberalisation (Without).

A first observation to take from chart 4.2 concerns the diversity in annual expenditure, and how much more the higher income households spend relative to households in the other quintiles. Households (on average) in the highest income quintile spend 4.2 times as much as households in the lowest income quintile. In comparison, households in the fourth income quintile spend 2.7 times as much as households in the lowest income quintile. Simply by spending more, the trade and investment liberalisation would be expected to deliver bigger absolute cost savings to the higher income quintiles (assuming the same consumption profiles).

The distribution of expenditure gains across areas of consumption will depend on the magnitude of price reductions (largely reflecting the size of the tariff reductions) and the share of household expenditure allocated to that good/service. Analysis of the data underlying chart 4.2 suggests that between 50 per cent (lowest income quintile) to 69 per cent (highest income quintile) of the expenditure gain is attributable to two areas of household expenditure — clothing and transport. This reflects the very large clothing and automotive tariff reductions, which has led to household being able to access cheaper overseas products. And, in the case of transport, it reflects the large amount of household expenditure consumed by vehicle ownership.

The impact of trade and investment liberalisation on expenditure on items that are sourced less from overseas (such as communication and medical, health and personal care products/services) is much lower.

4.2 Change in expenditure in 2016-16 for the average Victorian household



Data source: CIE analysis using the GTAP and CIE-Regions models and the ABS HES.

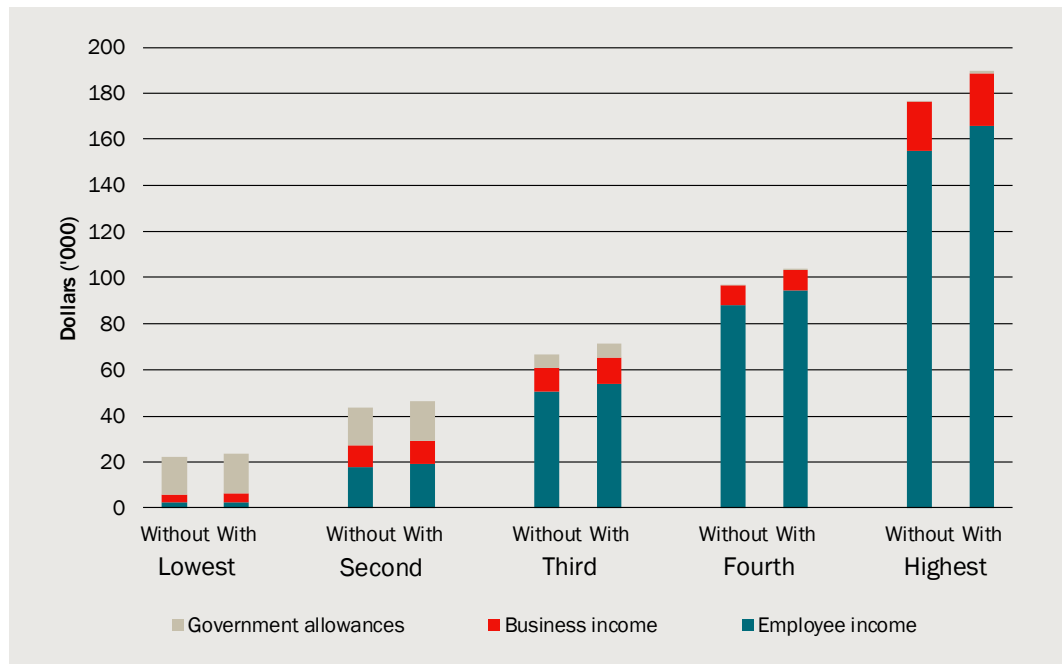
As was reported in chapter 3, the trade and investment liberalisation is estimated to have had a positive impact on wages and returns to capital. Chart 4.3 shows observed household disposable income in 2015-16 (With liberalisation), and what that disposable income would have been in the absence of trade and investment liberalisation (Without).

As was the case with household expenditure, there is large variation between the quintiles in terms of disposable household income. Households in the highest income quintile have (on average) 8 times the disposable income than households in the lowest quintile. Households in the higher income quintiles could therefore be expected to gain more in absolute terms from the trade and investment reforms simply by earning more.

The economic modelling conducted suggests that nominal wage income in Victoria is 7.1 per cent higher in 2016 than it would have been without the trade liberalisation. Income from business income (capital ownership) is estimated to be 8.9 per cent higher and

income from government transfers is 5 per cent higher.¹² As can be seen from chart 4.3, households in the higher income quintiles source proportionally more of their income from employee and business income, which experience the largest increases following the trade and investment liberalisation. Households in the lowest income quintile are estimated to have benefitted from a A\$1201 (5.4 per cent) increase in income attributable to the trade and investment liberalisation, versus A\$12 868 (7.3 per cent) in the case of households in the highest income quintile.

4.3 Impact of liberalisation on disposable income of Victorian households



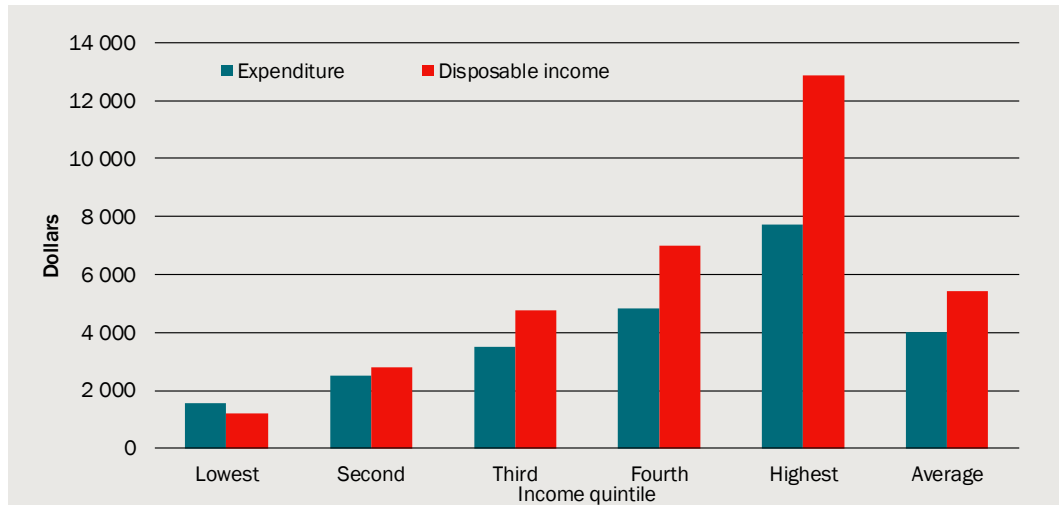
Data source: CIE analysis using the GTAP and CIE-Regions models and the ABS HES.

The combined impact of trade and investment liberalisation conducted over 1986 to 2016 on household disposable income and expenditure is reported in chart 4.4. As households in the higher income quintiles are earning and spending more, these households have the larger absolute dollar gains. For example, households in the lowest income quintile are estimated to be advantaged by some \$2751 in 2016, versus \$20 582 in the case of household sin the highest income quintile.

Combining the higher wages and lower household expenditure, the average Victorian household is around A\$9464 better off in 2016 as a result of the trade and investment liberalisation undertaken by Australia over the 1986–2016 period.

¹² In this analysis the simplifying assumption is made that government transfers change in line with nominal GDP.

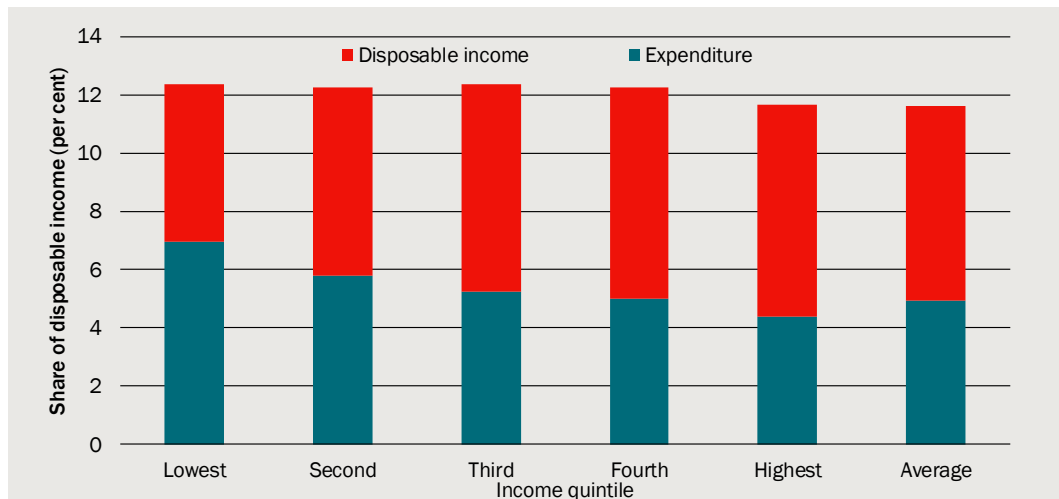
4.4 Impact of liberalisation on household disposable income and expenditure



Data source: CIE analysis using the GTAP and CIE-Regions models and the ABS HES.

The wealthier households have benefitted more from trade and investment liberalisation in absolute terms. However, as can be seen from chart 4.5, when the gains are expressed as a share of household disposable income, the gains are greatest for the lower income quintiles. That is, the impact of trade and investment liberalisation is regressive. Households in the lowest income quintile are estimated to experience gains equivalent to 12.4 per cent of their disposable household income, versus 11.6 per cent in the case of households in the highest income quintile.

4.5 Gains as a share of household disposable income



Data source: CIE analysis using the GTAP and CIE-Regions models and the ABS HES.

Areas of liberalisation and impacts on households

As noted above, trade and investment liberalisation has two types of financial impact on households — lowering the cost of purchasing the (current) bundle of goods and services, and raising household incomes. As can be seen from table 4.6, the differing types of

liberalisation impact prices (as measured by the CPI) and household income (as measured by nominal wage income) differently. Households will benefit the most from those areas of liberalisation that have the biggest price lowering and wage increasing outcomes.

Tariff and FDI liberalisation is universally good for households, as these areas of liberalisation both lower prices and raise household incomes. Liberalisation of tourism services is mixed. On the one hand, it improves employment opportunities and sees higher wage income, however, the greater domestic economic activity brought about by tourist spending sees prices being higher than otherwise. The higher prices act to offset some of the gain brought about by the higher wages.

The impact of education liberalisation is complicated by the fact that not only do the increase in exports drive price and wage increases (as was the case with tourism), but the foreign students add to the labour force. A larger (than otherwise) labour force has a downward impact on wages, which in turn sees the prices being lower than otherwise. The larger labour force therefore partially offsets the price and wage increases attributable to the increase in education related exports.

4.6 Areas of liberalisation and the differing impacts on prices and wages

Area of liberalisation	CPI	Nominal wage income
	Per cent	Per cent
Tariffs	-3.7	3.6
Foreign Direct Investment	-0.7	0.7
Tourism (exports)	0.1	0.4
Education (exports)	0.4	2.3
Education (labour supply)	-0.1	0.1
Total	-4.0	7.1

Source: CIE analysis using the GTAP and CIE-Regions models.

5 *The future of liberalisation*

Economic modelling suggests that the process of trade and investment liberalisation over the period of 1986–2016 has generated significant benefits for the Victorian economy. However, in many areas, significant barriers to international trade and foreign direct investment remain in force. This chapter explores the possibilities for future liberalisation efforts by identifying sectors of the economy that are currently subject to policy barriers that restrict international trade and investment.

While barriers to trade and FDI may still exist, it is not necessarily the case that further liberalisation is warranted in all cases. For example, in some industries the remaining barriers may be justified on the grounds that service provision is restricted to Australian businesses on national security grounds. It is therefore necessary to scrutinise remaining trade and investment barriers in order to determine whether they are justified. Moreover, given the diversity of topics covered in this section, it is not possible to fully scrutinise the details of each topic in this report. Nevertheless, the process covered in this chapter provides a useful starting point in identifying priorities for the Victorian and Australian governments.

In considering the future of Australian trade and investment liberalisation, the focus will be on areas of the economy that face trade and investment barriers, and which make up large shares of the Victorian economy as, other things being equal, liberalisation of these sectors is likely to generate larger benefits for the Victorian economy. Nevertheless, it should be noted that in some cases reforms to smaller sectors may be easier to realise (so called low hanging fruit), and could therefore be a potentially higher priority for the Victorian and Australian governments than larger, more difficult reform. It is also important to note the focus is on trade related issues, rather than general microeconomic reform. The trade reform versus general microeconomic reform distinction is not always clear cut. For example, privatising a government owned enterprise, or removing a monopoly supplier in an industry will increase the opportunity for international investment — but is this a trade reform or a microeconomic reform? This raises a related point in that relevant policy reforms could fall under the jurisdiction of state or federal governments. Finally, only Australian trade and investment liberalisation is considered, as opposed to reducing the barriers put in place by other countries. However, given that such liberalisation is often determined in international negotiations, practical efforts to liberalise trade and investment are generally combined with efforts to reduce barriers in other countries.

Trade in goods

The largest gains estimated in this report over the period from 1986–2016 are generated by tariff reductions. Between 1986–2016, the average (import weighted) tariff on imports into Australia decreased from over 7 per cent to under one per cent, with very large reductions in clothing and apparel, footwear, and motor vehicles.

However, it is unlikely that significant benefits can be achieved by further reductions in tariffs. This is primarily because tariffs have mostly been eliminated. As tariffs in 1986 have since been reduced by 88 per cent (by trade weight), the largest goal of any further tariff liberalisation would be the remaining 12 per cent.

The benefits from tariff reductions face diminishing returns, and with Australia having already undertaken extensive merchandise trade liberalisation, little in the way of additional gains are expected. Therefore, while reducing tariffs down to zero should be a goal of Australian trade policy, the benefits from this final reduction are likely to be relatively small.

Non-tariff barriers

While the benefits from further tariff reduction are likely to be small, there are a number of other non-tariff barriers that impede trade in merchandise goods. One significant barrier is the Australian anti-dumping system, which allows tariffs to be placed on goods when an overseas seller sets a price in Australia that is lower than the ‘normal value’. However, in practice, the anti-dumping system acts a hidden trade restriction. In a recent report, the Productivity Commission stated:

Australia ostensibly has an anti-dumping system because WTO rules allow it. However, there is no compelling economic rationale for doing so and it is clear that current anti-dumping arrangements are making Australia, on a national welfare basis, worse off.¹³

Anti-dumping measures in Australia are concentrated in a small number of capital intensive industries, and are particularly common in the steel industry. The average tariff in place under this system is 17 per cent, and tariffs are currently being charged on 0.4 per cent of imports (although these tariffs are designed to limit imports, so it is unclear how large these imports would be in the absence of the anti-dumping tariffs). It is unclear how much damage anti-dumping duties are doing to the Australian economy. Nevertheless, eliminating (or reforming/improving) the Australian anti-dumping system should be further investigated by the Australian Government.

There are a wide range of other Australian regulations that could potentially restrict trade in merchandise goods. These include:

- biosecurity (sanitary and phytosanitary) laws that are designed to reduce the spread of pests and diseases, as well as limit the risks from additives, toxins and contaminants in food and feed
- product labelling laws (such as nutritional information on labels)

¹³ Productivity Commission 2016, *Developments in Anti-dumping Arrangements*, Commission Research Paper.

- product safety laws.

In each case, these rules serve a legitimate function and should not simply be removed in order to facilitate trade. Nevertheless, the impact that these regulations have on international trade should be considered when designing relevant regulations. Moreover, Australian governments should actively seek any opportunity that exists to harmonise regulations with international standards such that they do not lower protections offered to Australian consumers. (For instance, if Australian and New Zealand product safety law was harmonised, then importers could work in both markets without the need to understand and comply with multiple sets of regulations).

Trade in Services

In chapter 3 it was estimated that trade liberalisation induced increases in education and tourism exports over the 1986–2016 period have been responsible for increasing real GDP in Victoria by around 2.1 per cent. There also exist stronger barriers to trade in the service sector than remain in merchandise trade. This suggests that further efforts to liberalise service trade in these (and other service) areas should be a priority for governments at the state and federal level.

Education

Education is the largest single export item for Victoria, representing 16.1 per cent of Victorian exports. Education also represents 7 per cent of all Australian exports. The level of foreign students studying in Australia is strongly influenced by a range of government policies, including:

- the availability, processing time and cost of student visas
- the pathways available to for international students to become permanent residents
- the design and funding of Australian universities, which impacts on the incentives for universities to attract foreign students
- funding of foreign students to study in Australia through scholarship programs.

Given the importance of international education to the Victorian (and Australian) economy, it is important that these regulatory settings are set in a way that allows international students to study in Australia with the minimum level of regulatory oversight required to maintain the integrity of the program (for instance, to ensure that private providers are not selling low quality training programs as a pathway to permanent migration).

Australian exports are influenced by policies determined by different levels of government in Australia and overseas.

- The Federal Government is responsible for visa regulations, funding requirements and regulation of Australian tertiary education. They also directly subsidise a number of international students through scholarship programs.
- State and territory governments are responsible for funding and regulating education in the school system and vocational education sectors.

- Foreign governments determine whether students are able to study in Australia, and whether the degrees will be recognised in the home country.

A recent summary of the policy issues involved in international education is provided in a recent Productivity Commission paper.¹⁴

Tourism

Tourism is Victoria's second largest export, representing around 9.4 per cent of Victorian exports. It is also Australia's largest service export. Tourism in Australia is heavily dependent on government policies, which suggests that further liberalisation may be possible.

One area where significant gains can be made is in the area of Air Service Agreements. Based on the analysis in this report, there is still significant room to liberalise Australia's ASAs, and thereby increase competition in the air services market. The principal areas where this can be improved are the increased granting of rights for foreign carriers to fly routes between two Australian cities, either as a leg of a longer international flight (5th and 7th Freedoms), or as a standalone flight (cabotage).

Moreover, there are still some important international routes that operate under restricted capacity, which generates rents for airlines and increases the price for tourists. A recent Productivity Commission report identifies Hong Kong, Malaysia and Qatar as the three economies which are currently capacity constrained by the existing ASA. Including unlimited capacity under these agreements would remove the rent captured by airlines, reduce the price for tourists, and increase the number of tourists visiting Australia.¹⁵

ASAs are a complicated policy area, and decisions to change existing agreements must be made within the context of the bilateral system of agreements. This means that even if Australia wished to unilaterally liberalise our ASAs, it would need agreement from other countries, and which may not always be forthcoming (particularly regarding relaxing capacity on international routes). Nevertheless, other countries have achieved more liberal ASAs, including the United States, countries within the European Union, and New Zealand.

New Zealand provides a useful example for Australia as it is a small country with predominantly long-haul flights that has achieved largely 'open skies' based agreements. New Zealand has a WALI of 35.4.¹⁶ Using the methodology in appendix B, if Australia

¹⁴ Productivity Commission 2015, International Education Services, Commission Research Paper.

¹⁵ Another option in this area is to extend the so called 'regional package' that allows foreign airlines unrestricted access to regional airports, so that it includes more of Australia's airports. This is recommended in: Productivity Commission 2015, Australia's International Tourism Industry, Commission Research Paper.

¹⁶ This value is based on air service agreements in place in 2011. New Zealand has signed or updated agreements with 13 countries since then, and so the value of 35.4 is likely to slightly underestimate the level of liberalisation in the existing agreements.

achieved the level of open skies agreements that are in place in New Zealand, inbound tourists into Australia would increase by around 2 per cent.¹⁷

Other than changes to Australia's ASAs, there are a number of other policies that could increase the attractiveness of Australia as a tourism destination. These are discussed in detail in a recent Productivity Commission report into Australia's tourism industry.¹⁸ One area of government policy that is highlighted by the Productivity Commission is the availability and cost of visas for foreign tourists. This is particularly relevant for visitors from China, India and Indonesia, which are the largest sources of Australian tourists that must apply for a Visitor visa (subclass 600). Unlike visitors from other countries who can apply for an Electronic Travel Authority visa (subclass 601), visitors travelling under a subclass 600 visa must pay an application fee of A\$140 and wait while the visa is approved (around 90 per cent of application are processed within 29 days).

Other services

Barriers to service trade take a variety of different forms across countries and industries, and include:

- not recognising qualifications from workers in other countries (and therefore not granting them a licence to operate in Australia)
- specific subsidies for domestic content (such as in the film and television industry)
- differential tax treatment for domestic and foreign firms.

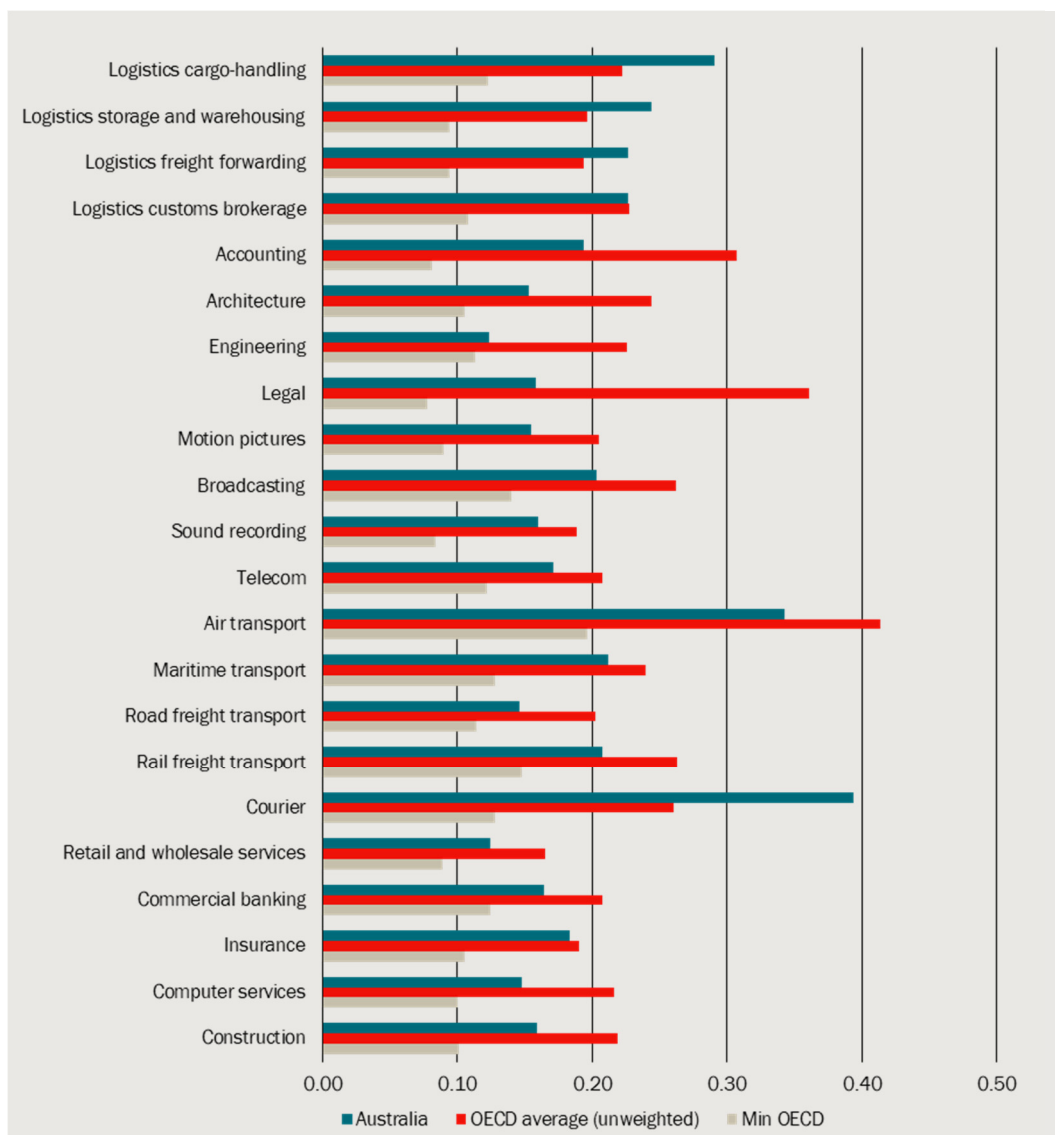
In order to study the effect that these barriers have on the level of international services trade, the OECD has developed the Services Trade Restrictiveness Index.¹⁹ This index surveys OECD countries on a range of policies relating to trade in services, and then convert the results into an index ranging between zero (complete free trade) and one (no trade allowed). The results of this survey for Australia in 2016 are shown in figure 5.1.

¹⁷ This estimate is subject to all of the caveats raised in Appendix B.

¹⁸ Productivity Commission 2015, Australia's International Tourism Industry, Commission Research Paper.

¹⁹ It was not possible to use this survey as the basis for the main quantitative estimates in this report as the Services Trade Restrictiveness Index has only been compiled since 2014.

5.1 OECD Services Trade Restrictiveness Index



Data source: OECD Services Trade Restrictiveness Index.

In interpreting these results, it is important to take the following into consideration.

- Barriers to service trade are better justified in some areas than others, and therefore the best area to reduce barriers to trade will not necessarily be in the industry with the highest existing barriers.
- Some services are inherently more difficult to trade between countries, and therefore barriers to services trade will be less important.
- The data collected by the OECD are based on self-reported data, and are designed for cross-country comparisons across multiple industries.
- The OECD index includes policies that apply equally to foreign and domestic firms, and therefore include guidance on a broader range of microeconomic reforms than are considered in this report.

- The Services Trade Restrictiveness Index also includes measures relating to FDI, which results in overlap between this index and the discussion of FDI restrictions discussed below.

With these considerations in mind, the results suggest that Australia has relatively low barriers to services trade relative to other OECD countries. Australia has less than the average OECD barrier in 18 of 22 areas. The two areas in which Australia has relatively high barriers (as measured by the OECD index) are courier services and logistics services. The OECD states that this is because:

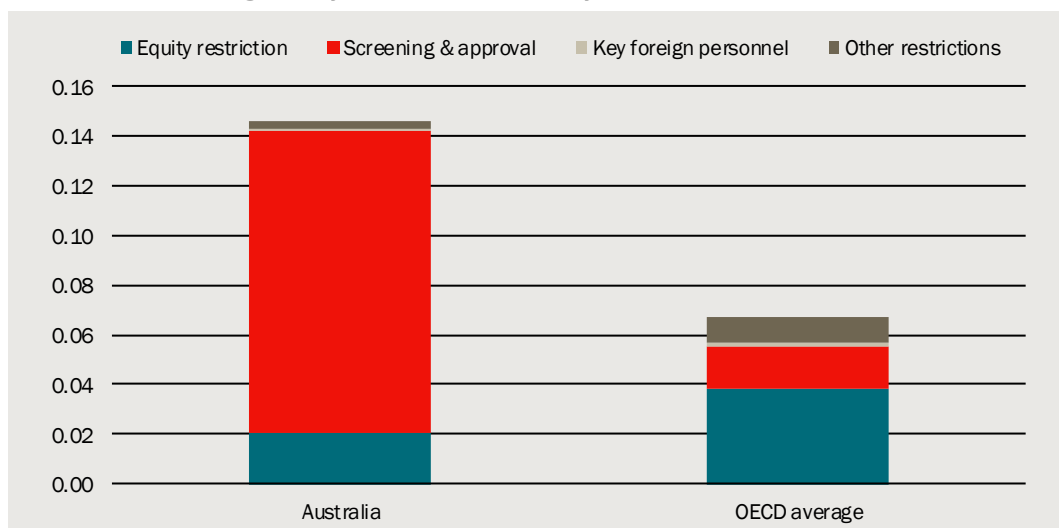
Logistics services are affected by a number of administrative procedures related to obtaining a license and to obtain a business visa. A state owned enterprise contributes to the index in cargo handling. In courier services, Australia maintains a state-owned postal service monopoly on letters weighing up to 250g and costing less than four times the basic postage rate. The postal services are also partly exempted from the application of the competition law.

Each of these areas represents a complicated policy area, further research is required to determine whether the existing barriers to trade are justified.

Foreign direct investment

Australia has relatively high barriers to foreign direct investment relative to other OECD countries. As seen in chart 5.2, FDI barriers in 2016 are mostly in the form of screening and approval mechanisms, although there are specific restrictions on foreign ownership that apply in some circumstances in the real estate and communications sectors.

5.2 OECD FDI Regulatory Restriction Index, type of barrier



Data source: OECD FDI Regulatory Restrictiveness Index.

Over the period 1986–2016, the FDI Regulatory Restrictiveness Index for Australia has reduced from 0.460 to 0.146. Using the methodology in appendix C, the reduction of 0.314 index points is estimated to increase FDI into Australia by around 37 per cent.

Following this methodology, it is possible to estimate the impact of further reductions in barriers to FDI.²⁰

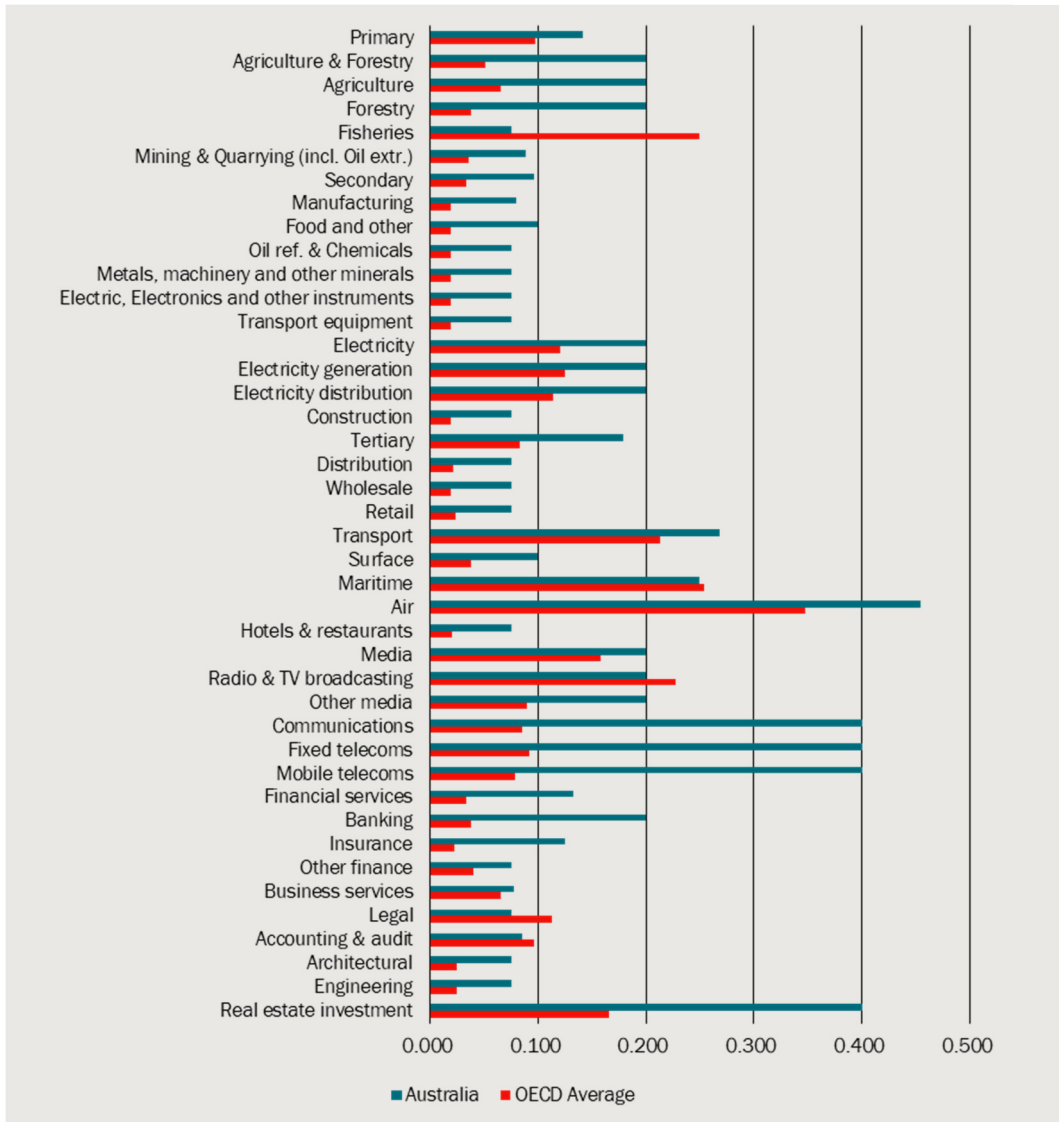
For instance, if Australia were to reduce FDI barriers to the OECD average of 0.067, the methodology would suggest that it would increase the Australian FDI to GDP ratio from 50 per cent to 53 per cent, and would increase the stock of inward FDI in Australia by around A\$56 billion. Some countries have removed almost all barriers to foreign investment.²¹ If Australia followed this path, it is estimated that the FDI to GDP ratio would increase to 56 per cent, and result in A\$104 billion more FDI than is currently observed.

The FDI Regulatory Restrictiveness Index is also available by industry. As seen in chart 5.3, Australia has particularly high levels of restrictions in the telecommunications sector, with barriers to FDI being higher than the OECD average in 36 out of 41 industries.

²⁰ One significant caveat to these results is that the method used to estimate the relationship between the FDI RRI and inbound FDI did not distinguish between types of restrictions. This means that it is not clear whether the screenings and approvals measures used in Australia have the same impact on FDI that other restrictions (such as equity restrictions) have.

²¹ For instance, the lowest values of the FDI Restrictiveness Index are Luxembourg (0.004), Portugal (0.007), Slovenia (0.007) and the Czech Republic (0.01)

5.3 FDI Regulatory Restriction Index by industry



Data source: OECD FDI Restrictiveness Index

A Understanding Australia's tariff schedule

Tariff schedules are, in general, complex documents and Australia's tariff system is no different. Australia's tariff schedule identifies over 6000 different product categories. There is also a different tariff schedule for each preference arrangement Australia has in place. That is, a schedule for each partner under a bilateral or regional trade agreement, and a separate schedule for each category under Australia's Generalised System of Preferences arrangements. Across all preference arrangements, Australia had over 84 000 lines of tariff schedule in 2016.

Australia's preference arrangements currently comprises five preference categories: Least Developed Country (LDC), Forum Island Country (FIC), Developing Country (DC), Developing Country Status (DCS), and Developing Country Category T (DCT).²² Australia is also party to 10 free trade agreements (FTAs), spanning 16 different countries. Some countries face multiple tariff schedules. For example, imports from Malaysia could enter Australia under three alternative preferential tariff schedules: the Malaysia-Australia FTA, the ASEAN-Australia-NZ FTA, or the DCS schedule.

In addition to preferential tariffs, there are currently over 15 000 Tariff Concession Orders. These orders provide importers an exemption from import duties where particular conditions are met, such as where there are no known Australian manufacturers of goods that are substitutable for imported goods.²³ The applicability of these orders can change at any time. Individual importers can apply for a concession, and once in place the concession may be applied to any qualifying imports. Domestic manufacturers, however, may seek to revoke concession orders at any time. Other tariff concessions also apply to goods donated to charity organisations and products imported under policy by-laws (such as those applying in the TCF sector) as intermediate inputs to domestic production.

For a range of reasons, not all importers make use of preferential tariff rates made available through the various bilateral or regional trade agreements. For example, an importer may conclude that the costs associated with establishing the country of origin required to make use of the preferential rate are greater than the benefits of the preferential rate; some traders do not know they require origin certificates to make use of

²² A list of countries included under each category can be found in DFAT 2016, *Review of the Australian System of Tariff Preferences (ASTP) Discussion Paper*, available at: <http://dfat.gov.au/trade/topics/Documents/astp-review-discussion-paper.pdf>

²³ See Department of Immigration and Border Protection, *Advice about Tariff Concession Orders*, available from: <http://www.border.gov.au/Tariffclassificationofgoods/Pages/Advice-about-tariff-concession-orders.aspx>

preferential rates; and some goods do not meet origin requirements of the agreements. The rate of utilisation of preferential rates is an area that requires further research.²⁴

The various tariff concessions available, the complications of different tariff schedules, and less than comprehensive utilisation of preferential tariffs, mean that precise calculation of Australia's effective tariff rate is difficult. A bottom-up approach based on individual tariff rates under various preferential arrangements and trade data results in an estimated value of import duties somewhat different to the official revenue accounts. A top-down approach, using the value of imports and duty collected has been used in this report to establish the average effective tariff rate applied in Australia over the past 30 years (as shown in chart 1.1). A bottom-up approach, based on individual tariff rates, was used to determine the change in tariff rates at the sectoral level for imports from differing countries/regions used in chapter 3.

Measures implemented by Australia to realise tariff reductions

As was noted in Chapter 1, Australia has pursued trade liberalisation through three different avenues — unilateral liberalisation, regional or bilateral liberalisation, and multilateral liberalisation under the auspices of the GATT and then the WTO. Overall, trade liberalisation by Australia has lowered the average (import weighted) tariff rate from around 7 per cent in 1986 to under 1 per cent in 2016 (see chart 1.1). Box A.1 describes the specific measures implemented to realise these tariff reductions.

A.1 Australian tariff reductions over 1986–2016

Unilateral tariff reductions

Australia has undertaken two major rounds of economy-wide unilateral tariff reductions since 1986:

- 1988–1992
 - all tariffs over 15 per cent reduced to 15 percent
 - tariffs between 10 and 15 per cent reduced to 10 per cent
 - passenger motor vehicles (PMV) and textiles, clothing and footwear (TCF) industries excepted.
- 1992–1996
 - all tariffs reduced to 5 per cent
 - PMV and TCF industries excepted.

The PMV and TCF industries followed separate trade liberalisation schedules. These industries actually saw an increase in protectionist measures in the period between 1974 and 1984. A range of tariffs, import quotas and bounties were implemented.

²⁴ In calculating tariff rates for this report, 100 per cent utilisation of tariff preferences has been assumed. While full utilisation of tariff preferences is unlikely to be true in practice, this is not believed to change the substantive outcomes of the analysis as the other elements that lower the effective tariff rate (such as concessions) appear to more than offset the impact of a lower utilisation rate at the aggregate level. This would differ by sector, however.

A schedule of liberalisation for each industry was prepared in the mid-1980s under Industry Minister John Button, and subsequently extended to reduce tariff rates to 5 per cent or lower by 2015. The tariff reductions implemented for these industries is shown in the table below.

TCF and PMV tariffs 1990–2015

	1990	1992	1994	1996	1998	2000	2005	2010	2015
	%	%	%	%	%	%	%		
Apparel and certain finished textiles	55	51	43	37	31	25	17.5	10	5
Footwear	45	41	33	27	21	15	10	5	5
Woven fabrics	40	37	31	25	19	15	10	5	5
Sleeping bags, table linen	25	23	19	15	12	10	7.5	5	5
Passenger motor vehicles	40	35	30	25	20	15	10	5	5

Source: Industry Commission 1997, *The Textiles, Clothing And Footwear Industries Volume 1: Report*, Report No. 59, Table 6.1; Department of Immigration and Border Protection, *Current Tariff Classification* available at: <http://www.border.gov.au/Busi/cargo-support-trade-and-goods/importing-goods/tariff-classification-of-goods/current-tariff-classification/schedule-3/section-xii/chapter-64>.

Multilateral trade liberalisation

Australia has been a member of the GATT since inception in 1948 and subsequently the WTO from 1995. Despite this, Australia did not participate in many of the early tariff negotiation rounds because they excluded agricultural products.²⁵ Concessions agreed to under the Tokyo and Uruguay rounds to lower bound rates did not result in significant reductions in applied rates due to the unilateral tariff reductions that Australia had already undertaken in the 1970s and 1980s.

Australia has also implemented tariff concessions under the Generalised System of Preferences (GSP). This provides developing countries with non-reciprocal, concessional tariff rates. Australia currently has five categories of member countries that receive varying levels of preferential treatment. These countries enjoyed tariff rates 5 percentage points below the general tariff rate (or free entry for goods with a tariff rate lower than 5 per cent).

From 1992 Australia started a process of reducing preferences to all but the least developed countries (LDC) and Forum Island countries. Under this process, tariff rates did not increase for any country, but gradually moved towards the general rate. LDC and Forum Island countries have duty and quota free access to Australia.²⁶

²⁵ Parliament of Australia 2001, *Who's Afraid of the WTO? Australia and the World Trade Organization*, Joint Standing Committee on Treaties, Report 42.

²⁶ UNCTAD 2000, *Generalized System of Preferences: Handbook on the Scheme of Australia*, UNCTAD Technical Cooperation Project on Market Access, Trade Laws and Preferences, http://unctad.org/en/Docs/itcdtsbmisc56_en.pdf.

Australia was also party to the Information Technology Agreement, reached in 1996, which sought to eliminate tariffs on high technology products. In 2015, members agreed to extend product coverage of the agreement to an additional 201 products. Tariffs on these products will be eliminated between 2016 and 2019.²⁷

Bilateral and regional liberalisation

Australia's current bilateral and regional agreements, and their date of entry into force, are listed in the table below. In addition to these, Australia is currently negotiating a number of other regional and bilateral agreements.²⁸

Australia's bilateral and regional agreements

Country/region	Entry into force
New Zealand	1983
Singapore	2003
US	2005
Thailand	2005
Chile	2009
ASEAN & NZ	2010–2012
Malaysia	2013
Korea	2014
Japan	2015
China	2015

Source: DFAT n.d., *Status of FTA negotiations*. <http://dfat.gov.au/trade/agreements/Pages/status-of-fta-negotiations.aspx>.

Under each of the trade agreements, Australia has lowered tariff barriers below most favoured nation (MFN) rates (as well as services and investment provisions) for partner countries. The extent of the tariff reductions varies between agreements. As a result of these agreements, Australian exporters also gain enhanced access to partner markets.

²⁷ WTO n.d., *Information Technology Agreement – an explanation*, https://www.wto.org/english/tratop_e/inftec_e/itaintro_e.htm.

²⁸ For details of these see the DFAT website at: <http://dfat.gov.au/trade/agreements/Pages/status-of-fta-negotiations.aspx>.

B Liberalisation of air services and tourism exports

International air travel is regulated by a system of bilateral agreements between countries. These agreements, which have developed following the framework of the Chicago convention of 1944, are based on the principle that each country has sovereignty over its air space. As a result, rights granted to airlines to fly international routes must be specifically granted in an Air Service Agreement.²⁹ Australia is currently signatory to 101 such agreements.

These agreements are systematically updated over time to meet capacity demands and Australia has a longstanding policy to negotiate capacity ahead of demand.³⁰ As a result, the signing or updating of new agreements is often driven by increased demand for air services, rather than a change in foreign policy. (Therefore, it would be wrong to model the agreements in place in 1986 as a no liberalisation benchmark for this study).

Nevertheless, over time Australia has signed agreements that have been progressively more liberal, for instance, Australia has signed agreements that allow for:

- ‘multiple designation’ which allows Australia’s international airline routes to be shared between more than one carrier (prior to 1992, QANTAS was the sole Australian carrier)
- more use of ‘intermediate’ and ‘beyond’ rights, that allow airlines to carry traffic between two other countries provided the flight originates or terminates in its home country
- a higher level of international ownership of Australian airlines flying international routes
- uncapped capacity on certain routes
- airlines to set tariffs without consulting the other country
- freer use of code sharing with international partners.

One particularly notable example of international liberalisation in this era is the ASA signed with New Zealand in 1996 and again in 2000. The final form of the ASA removes all restrictions on flights ‘to’, ‘within’ and ‘beyond’ the other country. New Zealand is the largest market for international flights, with 19 per cent of short-term visitors arriving from New Zealand in 2016.³¹

²⁹ These rights are usually referred to as ‘the freedoms of the air’. An introduction to the rights included in ASAs can be found in Productivity Commission 1998 *International Air Services*, Inquiry Report No. 2.

³⁰ Productivity Commission 1998, *International Air Services*, Inquiry Report no. 2.

³¹ BITRE aviation statistics. Available at <https://bitre.gov.au/statistics/aviation/>.

The approach taken in this paper is to quantify the changes made in ASAs, and use this to estimate the impact on the total number of international passengers flying into and out of Australia. Any subsequent increase in passenger arrivals is assumed to be made up of international tourists (as opposed to permanent residents, business people or students), and the level of Australian tourist exports are changed proportionally to the change in tourist arrivals.

The approach only includes one type of tourism related liberalisation, and will therefore not consider the impacts of policy changes in other areas (such as changes to visa requirements for incoming tourists, or the privatisation of the Federal Airports Corporation). The approach also only considers the impacts of these reforms through changes in services exports (and therefore excludes the benefits accruing to Australians from cheaper international holidays).

Quantifying the changes — the Weighted Air Liberalisation Index

The extent to which liberalising ASAs will change observed airline traffic has been an area of active research amongst academic researchers, as well as research organisations such as the WTO, OECD and the Productivity Commission. One approach that has been used in the literature, and the approach that is followed here, is to convert the features of each ASA into an index.³² The relative weight assigned to each component is based on ‘expert judgment’. This index can then be tracked over time, showing which countries have liberalised their ASAs and those which have not. It can also be used within a regression framework to estimate the impact of liberalisation on airline traffic and prices.

The index used in this study is the standard Weighted Air Liberalisation Index developed by researchers at the WTO.³³ The derivation of this index is shown in table B.1. The measure can be calculated for each bilateral agreement, which is then weighted by the traffic covered by each agreement to give a Weighted Air Liberalisation Index (WALI) for each country.

B.1 The standard WTO Air Liberalisation Index

Provision	Weight
Grant of Rights (Select all that apply)	
Fifth Freedom: The right to carry traffic between two other countries provided the flight originates or terminates in the home country	6
Seventh Freedom: the right to operate flights between two other countries without the flight originating or terminating in the home country.	6

³² The other main approach found in the literature is to examine the impact of particular agreements using a case study based approach. This approach has the advantage that it is able to identify the idiosyncrasies of air travel in each country. However, it is also very difficult to generalise the results of these studies to estimate the impact of all reforms in Australia, and so can't be used for this project.

³³ The WTO report estimates for four different weighting schemes that provide different weights to different criteria. This report only considers the ‘standard’ series.

Provision	Weight
Cabotage: the right of an airline of one country to carry traffic between two points within the territory of another country.	6
Capacity (select one)	
Predetermination: Capacity must be pre-approved by governments before the commencement of operation	0
Other Restrictive: Hybrid capacity reviews that fall between Predetermination and Bermuda 1	2
Bermuda 1: Governments set capacity principles but allow airlines freedom to determine capacity, subject to review	4
Other Liberal: Hybrid capacity reviews that fall between Bermuda 1 and free determination.	6
Free Determination: Airlines can set capacity entirely free of any regulatory controls	8
Tariffs (select one)	
Dual Approval: Approval of both parties is required before tariffs can take effect.	0
Country of Origin Approval: A country may disapprove tariffs only for routes that originate in its own country.	3
Dual Disapproval: Tariffs become effective unless both parties disapprove them.	6
Zone Pricing: Tariffs are approved within a certain range, but outside the range dual approval (4 points) or dual disapproval (7 points) applies.	4 or 7
Free Pricing: Tariffs are not subject to the approval of any party.	8
Withholding (select one)	
Substantial Ownership and Effective Control: To use a countries rights under the agreement, substantial ownership and effective control must be vested in the designating party or its nationals.	0
Community of Interest: A foreign airline is permitted to operate under the condition that control is vested in an international organisation created by intergovernmental agreement, or is from a group of countries predefined to be a 'community of interest'.	4
Principle Place of Business: A foreign airline is accepted if it is incorporated in the designating party and its principal place of business or permanent residence is also in the designating party.	8
Designation (select one)	
Single: Each party may designate only one airline to provide services	0
Multiple: Each party may designate multiple airlines to provide services	4
Statistics (select one)	
Provisions exist to facilitate the exchange of statistics	0
No Provisions exist to facilitate the exchange of statistics	1
Cooperative arrangements (select one)	
Not allowed: Cooperative marketing arrangement such as blocked space and code-sharing are not permitted	0
Allowed: Cooperative arrangements are permitted	3
Total (maximum)	50

Source: World Trade Organisation (2006). Second review of the air transport annex: Developments in the air transport sector (part two): Quantitative Air Services Agreements Review (QUASAR).

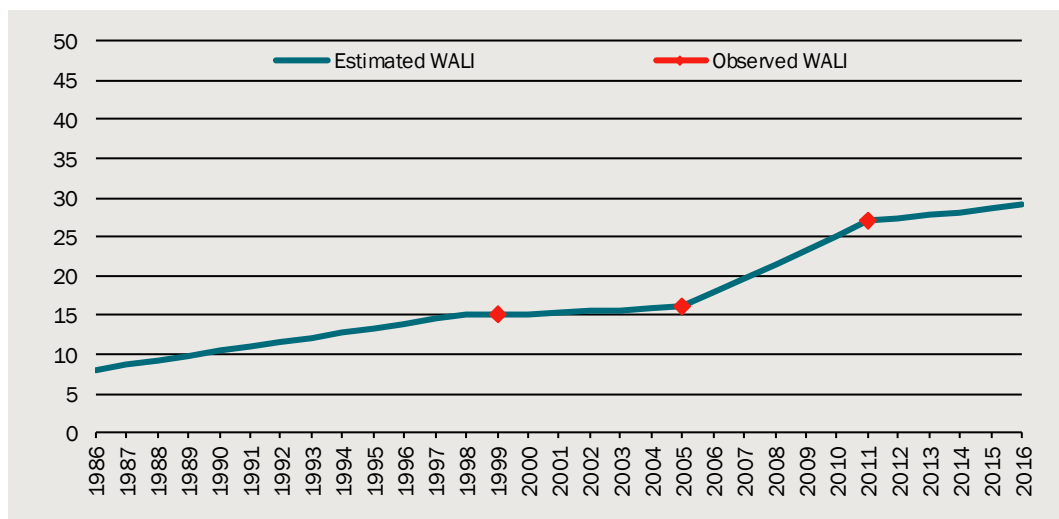
The WALI in Australia

Data on the features of Australia's ASAs are compiled from a number of different sources.

- The WTO has estimated the WALI based on the regulations in place in 2005³⁴ and 2011.³⁵
- The Productivity Commission produced a study of the impact of Australia's Air Service Agreements in 2001. The data used in this report was reweighted to provide an estimate of the WALI.
- Australia has signed a number of new agreements (and updated the terms of older agreements) since 2011, including agreements with China (2016), UAE (2015) Indonesia (2013) and Thailand (2012). The details from these agreements were manually extracted, where possible, and used to update the figures from 2011.
- The major reforms during the period 1986–2000 were based on a review of recent policy reforms in the Productivity Commission's Inquiry report on International Air Services (1998 pp. 64–76). These include:
 - the agreement to enter the single aviation market with New Zealand in 1996
 - the inclusion of multiple designation on all ASAs signed from 1992 onwards
 - partial relaxation of equity requirements for Australian airlines.

These point estimates are then combined using a simple linear trend. The results are shown in chart B.2.

B.2 Australia's Weighted Air Liberalisation Index



Data source: CIE calculations.

Impact on air traffic

Several researchers have examined the relationship between the restrictiveness of ASAs (as measured by the WALI) and the amount of air traffic (measured in passengers) between different countries. These studies fall into two broad categories.

³⁴ WTO 2006, *Second review of the air transport annex: Developments in the air transport sector (part two): Quantitative air services agreements review (QUASAR)*.

³⁵ Results extracted from the WTO Air Service Agreement Projector, available at <https://www.wto.org/asap/index.html>.

- In the first type of study, traffic flow (or prices) between two countries is predicted using the bilateral Air Liberalisation Index along with other control variables in a cross-country regression. Some examples of this approach include Grosso (2010)³⁶ and Piermartini and Rousiva (2008).³⁷
- In the second type of study, different components of the Air Liberalisation Index are entered separately into the regression framework, and factor analysis is used to identify which components of the index are most important in determining traffic flows. Examples of this approach include Doove et al. (2001),³⁸ Gonenc and Nicoletti (2001)³⁹ and InterVISTA-ga (2006).⁴⁰

In principle, the second approach allows researchers to identify which features of ASAs are the most important influence on passenger numbers. However, in practice there is a high degree of correlation between different forms of liberalisation (for instance, countries that have multiple designation, are also more likely to include other liberal elements in their agreements), which makes it very difficult to distinguish which factors are most important.

This project will therefore focus on the first type of study. The results from these papers can be directly combined with the values in chart B.2 to provide an estimate of the effect of changing ASAs on the total number of flights into and out of Australia. These results are shown in chart B.3.

³⁶ Grosso, M. 2010. *Air Passenger Transport In APEC: Regulatory Impacts and Prospects for Asia Pacific Integration*. Journal of Economic Integration.

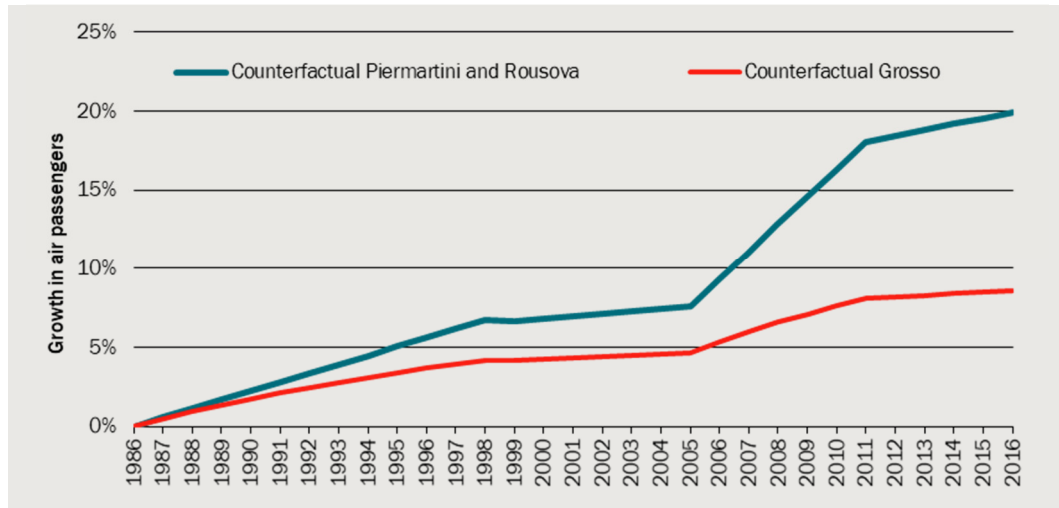
³⁷ Piermartini, R and Rousova, L. 2008, *Liberalization of Air Transport Services and Passenger Traffic*, WTO Staff Working Paper.

³⁸ Doove S., Gabbitas O., Nguyen-Hong, D. and Owen J. 2001 *Price Effects of Regulation: International Air Passenger Transport, Telecommunications and Electricity Supply*, Productivity Commission Staff Research Paper.

³⁹ Gonenc R., Nicoletti G. 2000: *Regulation, Market Structure and Performance in Air Passenger Transportation*, OECD Economics Department Working Paper, No. 254, Paris.

⁴⁰ InterVISTAS-ga 2006. *The Economic Impact of Air Service Liberalization*.

B.3 Growth in air traffic passengers resulting from liberalising air service agreements



Data source: CIE calculations based on Grosso, M. 2010. *Air Passenger Transport In APEC: Regulatory Impacts and Prospects for Asia Pacific Integration*. Journal of Economic Integration. And, Piermartini, R and Rousova, L. 2008, *Liberalization of Air Transport Services and Passenger Traffic*, WTO Staff Working Paper.

Chart B.3 is interpreted as the growth in air traffic capacity that has occurred as a result of Australia liberalising its ASAs. For instance, based on the Grosso study, Australia has around 8.5 per cent more flights and hence passenger capacity into and out of Australia in 2016 than they would have if they continued to sign 1986 style ASAs, and 20 per cent more under the Piermartini and Rousova study.

The CIE believes that this is the best approach currently available for determining the impact of liberalisation of ASAs. Nevertheless, the approach has several limitations that need to be acknowledged.

- The first limitation is that the estimates from Piermartini and Rousova (2008) and Grosso (2010) are based on cross-country regressions on a single year of data. Any analysis based on this type of model is potentially subject to endogeneity, and while the authors attempt to deal with these issues using a variety of statistical techniques, it is very difficult to fully control for this issue.
- The second limitation is that the estimates from Piermartini and Rousova (2008) and Grosso (2010) are average treatment effects. That is, they represent an average value of the impact of liberalisation across all countries, and for all types of liberalisation. It is unclear whether there is anything special about the liberalisation in Australia (either the types of liberalisation performed, or geographic features of aviation in Australia) that would make the effect on Australia deviate from this estimated average treatment effect.

Given the uncertainty involved with the approach, this paper uses the results from Grosso (2010) as this gives a smaller impact, and therefore gives a more conservative estimate of the impact of reform.

Change in tourism exports

The methodology above provides an estimate of the additional level of international air traffic that has occurred as a result of Australia liberalising its ASAs. However, the impact of additional air capacity is likely to be uneven across different categories of travellers. Data from the ABS shows the different reasons that foreigners fly into Australia (percentages shown are from 2016, and exclude the other/not stated category), these being:

- tourism (70 per cent)
- permanent entrants into Australia (8 per cent)
- education (6 per cent)
- business and employment (10 per cent).

It is assumed that the 8.5 per cent increase in air traffic capacity is taken up by tourists (rather than, for example, an increase in the number of people requiring flights in order to emigrate to Australia, conduct business meetings etc).

This latter assumption means that the number of tourists needs to increase by more than the average increase in air capacity. For instance, in 2016, in order for the total number of passengers to increase by 8.5 per cent, tourist need to increase by $8.5/0.7 \approx 12.1$ per cent.

The proportional increase is then applied to the observed level of:

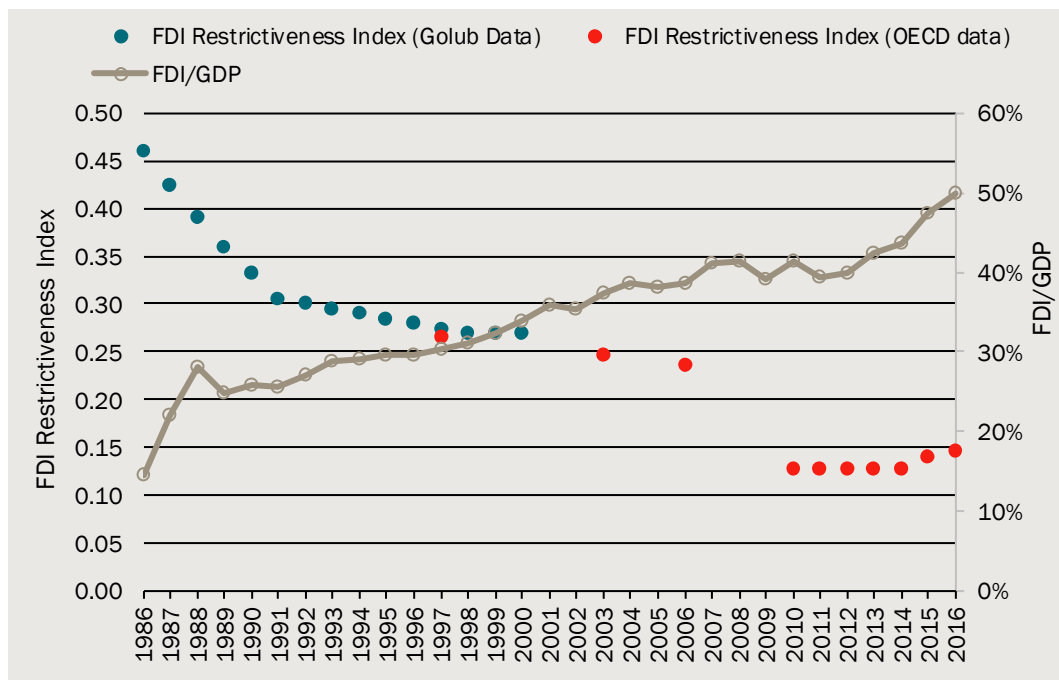
- 'other personal' travel exports (this covers expenses for goods and services (including accommodation, food, souvenirs, etc.) acquired by a person during their visit to Australia, but excludes expenditure by business and education related travellers)
- passenger transport exports (includes all transport sold to tourists within Australia, including agency fees and commissions for air transport).

C FDI liberalisation

Australia has traditionally placed restrictions of the entry of foreign direct investment. These restrictions have primarily been in the form of investment screening mechanisms (for instance, in 1986, all foreign takeovers required formal government approval).⁴¹ However, there have also been restrictions on the total amount of equity that foreign owners could have in Australian companies, with special restrictions for ‘strategic’ industries such as mining, banking and airlines.

Over the past thirty years Australia has significantly reduced these barriers to inward FDI while over the same period, Australia has seen a substantial increase in FDI as a percentage of GDP. During the period 1986–2016 the FDI/GDP ratio has increased from 15 per cent of GDP to 50 per cent of GDP. These two trends are shown in chart C.1.

C.1 The FDI Regulatory Restrictiveness Index and FDI in Australia



Data source: Golub (personal communication), OECD FDI Restrictiveness Index and CIE calculations.

⁴¹ A history of Australia’s reforms to investment policy can be found in Hanratty 1996, *Inward Direct Foreign Investment in Australia: Policy Controls and Economic Outcomes*, APH Research Paper.

Regulatory barriers to investment are measured using data from the OECD FDI Regulatory Restrictiveness Index⁴² and a similar index constructed in an OECD working paper published by Stephen Golub.⁴³ These indexes score the barriers to foreign investment across OECD countries, with a higher number representing greater barriers to investment. Over the 1986–2016 period, the FDI RRI for Australia decreased from 0.460 to 0.146.

The FDI Restrictiveness Index (and the previous measure by Golub) is based on investment regulations in 22 sectors of the economy. It does not attempt to measure enforcement of these regulations, and only covers measures explicitly designed to restrict FDI (but excludes measures such as the nature of corporate governance, the extent of state ownership, and institutional or informal restrictions which may also influence FDI). The estimates are reported in four components — foreign equity limitations, screening or approval mechanisms, restrictions on the employment of foreigners as key personnel and operational restrictions.

Chart C.1 appears to show a relationship between the observed level of foreign investment and FDI restrictions as measured by the FDI Restrictiveness Index. However, there are many things that influence FDI, including corporate tax rates, quality of local infrastructure, tariff barriers and access to global markets. This appendix examines several approaches that can be used to identify the underlying relationship between restrictions to FDI, and the observed level of FDI in a country.

Estimation methods

There are several approaches that can be used to estimate the relationship between FDI restrictions (as measured by the FDI Restrictiveness Index) and the level of FDI in a country. This appendix considers three general approaches:

- regressing the observed level of FDI in Australia on the FDI Regulatory Restrictiveness Index in a simple ‘Ordinary Least Squares’ framework
- cross sectional analysis that compares the level of FDI/GDP and the value of the FDI Regulatory Restrictiveness Index across countries
- fixed effects analysis using panel data.

OLS Regression on Australian data

The first approach is to run a simple linear regression on the data from chart C.1. This approach relies on the strong assumption that all yearly observations are independent (which is rarely the case with time series data). Nevertheless, this approach provides a useful starting point with which to compare more complicated methods.

⁴² Available for download from <http://www.oecd.org/investment/fdiindex.htm>

⁴³ Golub, S. 2003, *Measures of Restrictions on Inward Foreign Direct Investment for OECD countries*. The OECD measure was developed from the Golub measure.

The results of these regression are shown in table C.2, and suggest that over the 1986–2016 period, lower FDI restrictions has resulted in increasing the level of FDI (when measured as a share of GDP) by 12.2 percentage points (estimated just using the OECD data (1997–2017)) or 24.8 percentage points (using the OECD data and the Golub dataset (1980–2017)). During this period, the actual level of FDI has increased from 15 per cent to 50 per cent of GDP (an increase of 35 percentage points), so these models would suggest that 35–70 per cent of observed growth in FDI over this period is a result of decreased FDI restrictions.

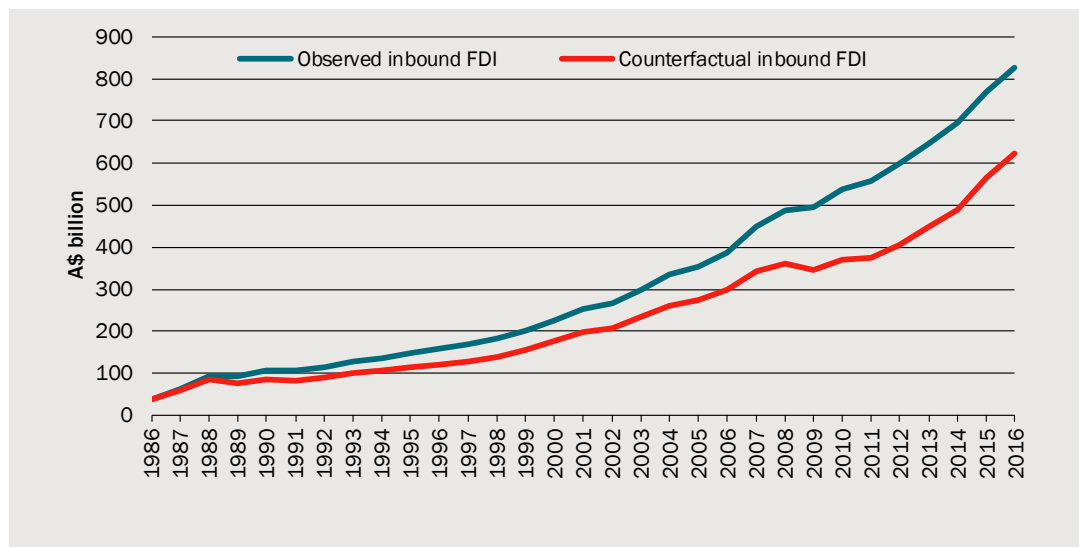
C.2 Results of regressions on Australian data

	Estimated coefficient	Standard error	Implied change in FDI/GDP over 30 years
All Years (1980-2017)	-0.79	0.04	24.8 percentage points
Just OECD data (1997-2017)	-0.39	0.21	12.2 percentage points

Source: CIE calculations.

Chart C.3 shows the observed and counterfactual inward FDI stock from the linear regression approach.

C.3 Inbound FDI using the estimate from a linear regression



Data source: CIE calculations using the estimate of -0.39 from table C.2

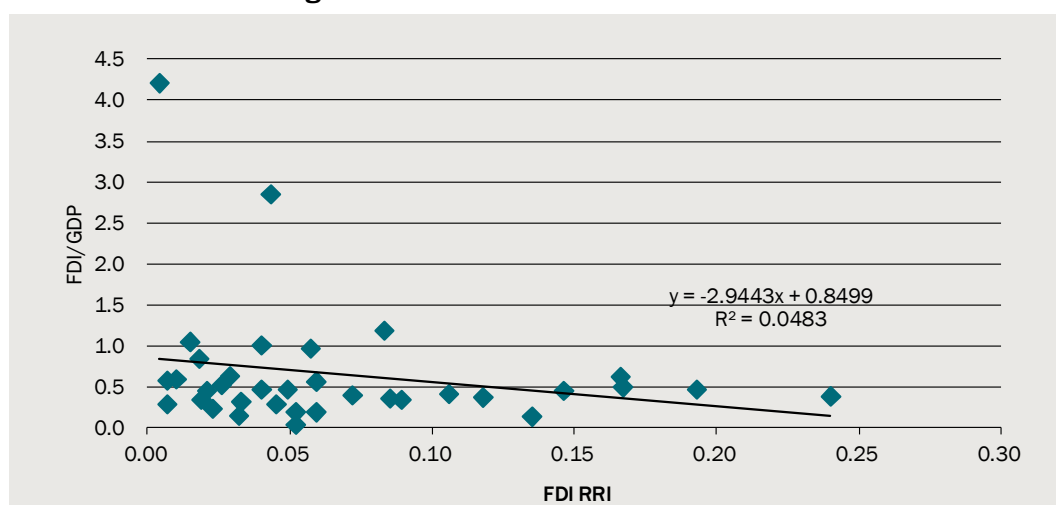
Cross-country regression using a single year of data

The next approach is to take a single year of data in multiple countries, and observe the relationship between the FDI Restrictiveness Index and the FDI/GDP ratio. This approach has been performed by the CIE, UN and OECD.⁴⁴

⁴⁴ See The Centre for International Economics 2010, *Quantifying the benefits of service trade liberalisation*; UNCTAD 2006, *Measuring Restrictions on FDI in Services in Developing Countries and Transition Economies*; and Thomsen, S. 2017, *OECD FDI Regulatory Restrictiveness Index: A tool for*

Chart C.4 shows the FDI restrictiveness Index and the FDI/GDP ratio for all OECD countries in 2016, and shows that countries with more FDI restrictions tend to have less FDI. An OLS regression line fitted to this data suggests that policies that reduce the index by 0.1 will increase FDI/GDP by 29 percentage points. Taken at face value, this would mean that Australia's reduction in the FDI Index across the last 30 years would increase the FDI/GDP ratio by 91 percentage points, which is significantly more than has been observed over this period.

C.4 Cross sectional regression results for 2016



Data source: UNCTAD Stat, OECD FDI Restrictiveness Index.

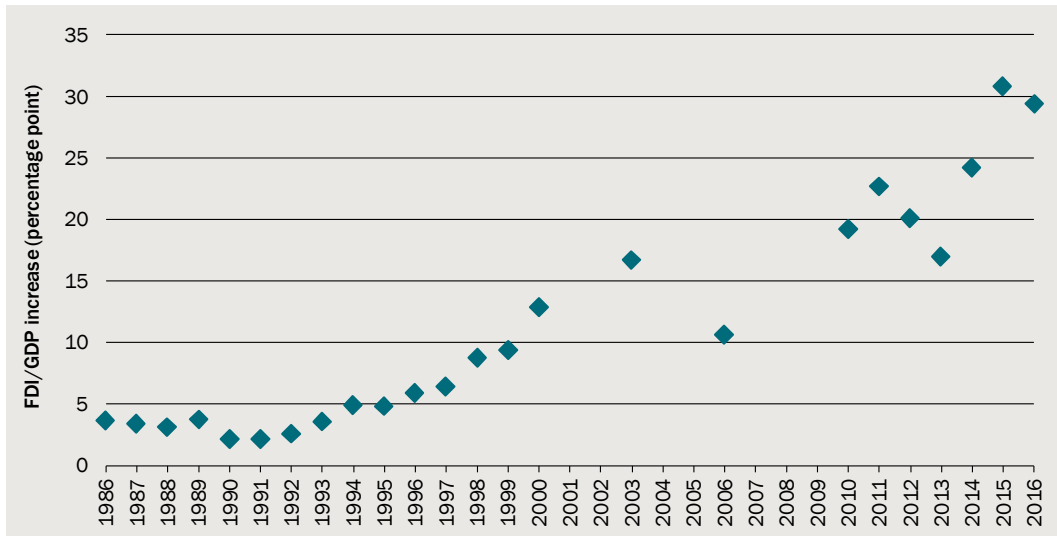
However, there are reasons to use caution when interpreting these results.

- The estimated relationship is highly dependent on the two countries with the highest FDI/GDP ratios (Luxembourg and Hungary). Removing these countries decreases the estimated relationship to -0.46 (compared to -2.94).
- The overall fit is not high (R-squared of 4.8 per cent).
- There is likely to be endogeneity in these figures where wealthier countries are more likely to have more open investment policies.

A further issue with using cross sectional regression is that, as can be seen from chart C.5, the relationship between the FDI restrictiveness Index and the level of foreign investment has changed over time. Therefore, if an estimate is used from a single year it will not be able to capture this changing importance of FDI restrictions over time.

benchmarking countries, measuring reform and assessing its impact, available at:
<http://www.oecd.org/investment/fdiindex.htm>.

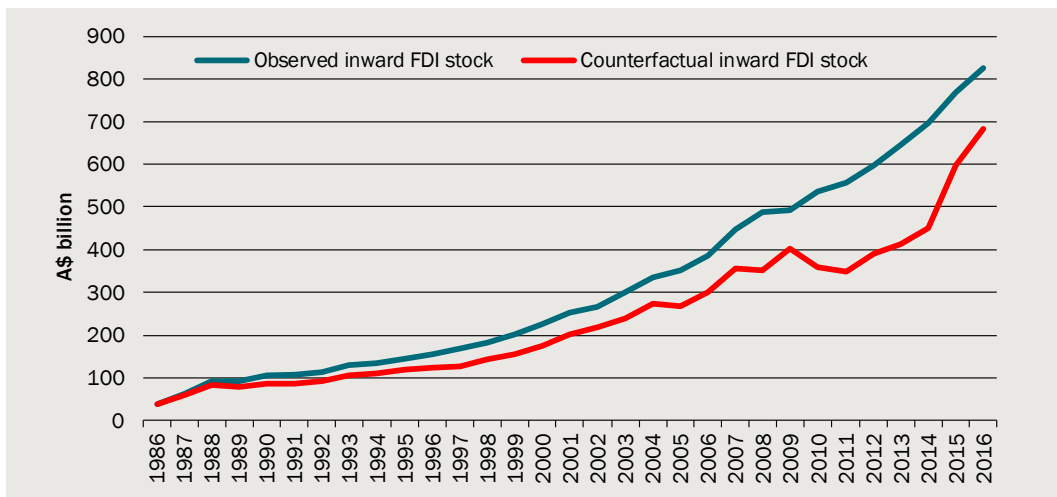
C.5 Estimated increase in FDI/GDP from a 0.1 reduction in the FDI Index



Data source: CIE calculations.

The estimates from chart C.5 can be used to create a counterfactual level of investment into Australia, where the annual change in FDI is adjusted based on the change in the FDI index in that year, and the estimate of the relationship in chart C.5. This counterfactual is shown in chart C.6.

C.6 Counterfactual FDI stock using year cross sectional regressions



Data source: CIE calculations.

Fixed effects regressions

The next approach is a fixed effect model that uses panel data on the restrictiveness index from multiple years. In this framework, country fixed effects capture idiosyncrasies of a

particular country,⁴⁵ while year fixed effects capture fluctuations in the global macroeconomic cycle.⁴⁶

The intuition behind this approach is to compare the variation in FDI/GDP in countries that have reduced barriers to FDI, with the change in FDI/GDP in countries that have not reduced barriers to FDI. This is done to investigate whether countries that liberalise inward FDI policies (and therefore reduce the FDI Restrictiveness Index) grow their level of FDI faster than countries that do not change their inward FDI policies. The CIE believe that this is the best approach for estimating the impact of FDI restriction on inbound FDI because the country specific variation is less likely to be effected by endogeneity issues than the other methodologies.

This approach is also combined with weights based on the total level of FDI (which means that larger countries are given more importance in the estimate). The estimation results are shown in table C.7.

C.7 Results from fixed effects regressions

	Estimated coefficient	Standard error	Implied FDI/GDP change
Country and year fixed effects, OECD data	0.02	0.5	-0.6
Country and year fixed effect, all years	-0.11	0.09	3.5
Country and year fixed effects, OECD data FDI weights	0.30	0.76	-9.4
Country and year fixed effects, All year, FDI Weights	-0.43	0.23	13.5

Source: CIE calculations

The most striking aspect of table C.7 is that the when estimated with just the OECD data (1997–2017), the coefficient on FDI is positive. That is, an increase in FDI restrictions is associated with an increase in investment. However, this unexpected estimate is caused by a lack of variation in the underlying data (the FDI restrictiveness Index was unchanged for many countries throughout the majority of this period), which means that the fixed effect model will not work well. It should also be noted that neither of these estimates is significantly different from zero.

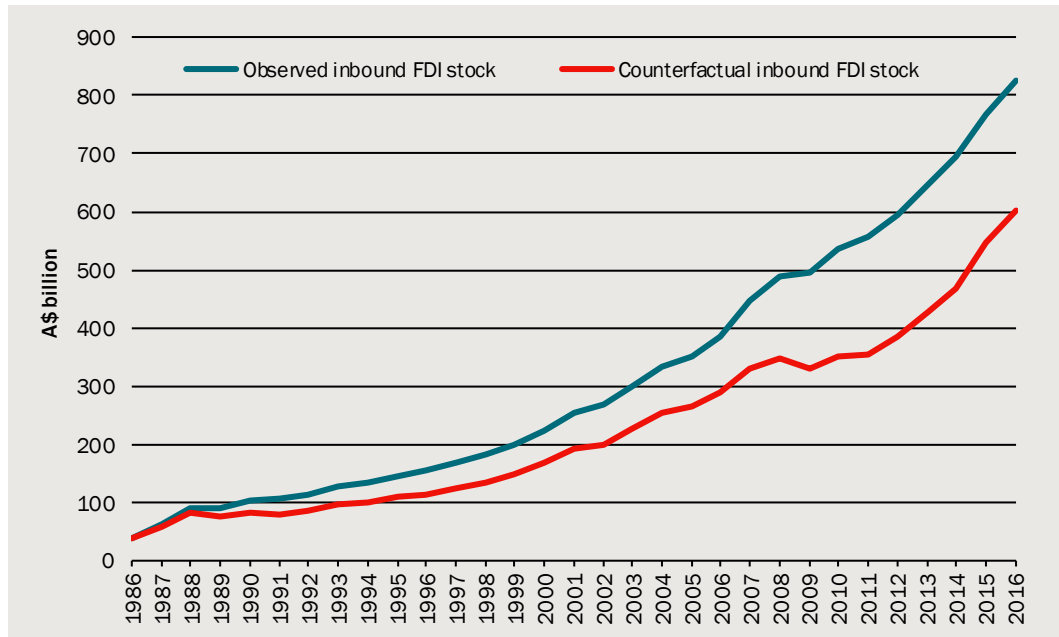
Therefore, it is considered that the best estimate comes from fixed effects estimation using all years of data (1980–2017). Moreover, using FDI based weights lessens the influence of one or two small countries that may have very large changes in FDI. Therefore, the preferred estimate comes from the bottom row of the table, and suggests that over 1986–2016, liberalisation of FDI barriers has seen the FDI/GDP ratio being some 14 percentage points higher than otherwise in 2016. With the FDI to GDP ratio increasing by 35 percentage points over 1986 to 2016, around 38 per cent of the increase in FDI in Australia can be attributed to FDI liberalisation.

⁴⁵ For instance, a country in Europe might receive more FDI because it is closely integrated with other European countries, while resource rich countries might receive a higher than average level of FDI. This model would say that these country specific effects are constant across all time periods.

⁴⁶ Year fixed effects will also allow for a step change between the Golub data series (1980–2000) and the OECD series (1997–2017).

The counterfactual level of FDI investment into Australia using this estimate is shown in chart C.8. This estimate is used as the basis of modelling in the main section of the report.

C.8 Observed and counterfactual FDI stock used in economic modelling



Data source: CIE calculations.

The OECD FDI Regulatory Restrictiveness Index

The approach detailed above is not without its limitations. For example, the index on which the methodology is based are based on self-reporting from each country involved. This may give rise to the situation where countries with the higher index scores are not actually more restrictive to FDI, just more transparent and thorough in the reporting of their FDI barriers.

A related issue is the fact that the OECD approach does not assign scores to screening restrictions based on national security tests, which may see ‘semantics’ being responsible for some countries receiving too low a score. European Union countries are also believed to receive FDI restriction index scores that are too low due to account being taken of inter-regional liberalisation, which saw adjustments to EU scores for preferences granted to intra-EU investment. These adjustments consisted of scaling down (by 0.44) European country scores in cases where such intra-European preferences were granted, even though this favourable treatment is not available to investors from other countries. The same approach is not extended to non-EU countries offering improved FDI access negotiated through trade agreements. For example, the Australian FDI index does not reflect the fact that Australia offers improved access to FDI from the United States, negotiated as part of the Australia-United States Free Trade Agreement (with similar provisions being found in subsequent bilateral agreements).

The approach also does not take account of any non-policy institutional or informal restrictions, nor the degree of enforcement of statutory restrictions. Furthermore, the weights assigned to the types of restriction have been subjectively determined.

Finally, it should be noted that the econometric techniques applied above are relatively sensitive to choices regarding model design, and generate estimates with relatively wide confidence intervals.

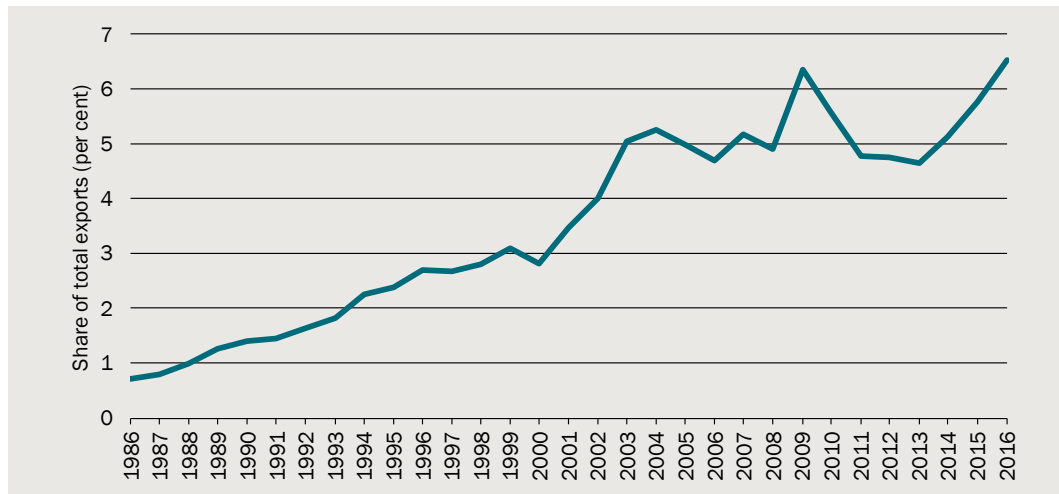
Despite these limitations, the approach used in this report provides the best currently available framework for quantifying restriction to inbound FDI. It builds upon an approach that has been applied by the OECD and UNCTAD to over 80 countries, and under different specifications of the model, FDI restrictions are an important predictor of inbound FDI. For instance, the R-squared for cross sectional regressions of total FDI on the FDI Restrictiveness Index varies between 0.05–0.1 (depending on the year, and whether outliers are excluded), suggesting that around 5–10 per cent of the variation in FDI is a result of FDI restrictions. (Note that the remaining variation in FDI would be accounted for by the other factors that influence the decision to invest in a (foreign) country— macroeconomic and political stability, the quality of infrastructure, the skills and education of the labour force, size and wealth of the local market, attitude to trade, transparency in decision making etc.) However, in previous work looking specifically at investment in the services sector, UNCTAD has found that FDI restrictions can explain up to 40 per cent of the variation in inbound FDI.

D International students in Australia

International education is one of Australia's major exports, with the ABS estimating service exports from education at just under \$22 billion in 2016, which is around 6.5 per cent of total Australian exports of goods and services. In the university sector in 2015, international students made up 15.5 per cent of all students⁴⁷ compared to an average of 6 per cent amongst OECD countries.

However, the role of international education as a major export industry is a relatively new phenomenon. As seen in chart D.1, there has been a steady increase in the share of exports accounted for by education since 1986. As with other areas examined within this report, part of this increase can be ascribed to changes in Australian policy, but it has also been strongly influenced by external factors, such as increased income levels in other countries (and hence greater demand to study in overseas destinations, including Australia).

D.1 Australian education exports as a share of total exports



Data source: ABS, Cat. No. 5368.0.

The increase in exports has occurred in all parts of the education sector. However, this report focuses on the university sector and the vocational education and training (VET) sector, while excluding primary and high schools, English language courses and non-award courses. This decision is made because the university and VET sectors together comprise around 88 per cent of education exports, and because the main reform considered related specifically to these sectors.

⁴⁷ OECD 2017, *Education at a Glance 2017: OECD Indicators*, OECD Publishing, Paris.

Education liberalisation in Australia

Before 1985, international education in Australia was predominantly designed to achieve diplomatic, development and foreign policy objectives.⁴⁸ International students were required to pay the Overseas Students Charge, but this was significantly less than the ‘full cost’ of the course.⁴⁹ The remaining cost of education for international students was funded through the aid budget.

On the 22nd of March 1985, a major change in policy was announced by Senator Susan Ryan, in which Australian universities would be allowed to admit full fee paying students. The existing subsidised program for international students was to remain in place but the subsidy for each student would be reduced over time (it was phased out completely in 1992). It was also announced that there would be a cap on international students set at 10 per cent of total student numbers, and a 20 per cent cap for any particular course. Legislation enacting these changes was introduced to the House of Representatives on 20 November 1985, with the official guidelines released by the Government in February 1986.

In the 30 years since the creation of a full fee paying program, a range of significant policy changes have occurred that impact on the level of international students. These include:

- changes in the difficulty and waiting times of acquiring a student visa⁵⁰
- increased levels of advertising by the Australian Government to international students
- changes in pathways for international students to acquire permanent residency
- university funding arrangements changing to further encourage full fee paying international students.

These reforms are further documented in the Department of Foreign Affairs and Trade (2005),⁵¹ Spinks (2016)⁵² and the Department of Education and Training (2015).⁵³

⁴⁸ Meadows, E. 2011, *From Aid to Industry*, chapter in Davis, D. and Mackintosh, B. 2011, *Making a difference: Australian International Education*, UNSW Press.

⁴⁹ This was increased over time, but its highest level was 45 per cent of the full cost of a course in 1987.

⁵⁰ The impact of waiting times on enrolment was examined in Australian Universities was examined in CIE 2014, *Economic impact of streamlined visa processing and post study work rights*, Final Report, NSW Department of Trade and Investment, Regional Infrastructure and Services.

⁵¹ Department of Foreign Affairs and Trade 2005, *Education Without Borders: International Trade in Education*.

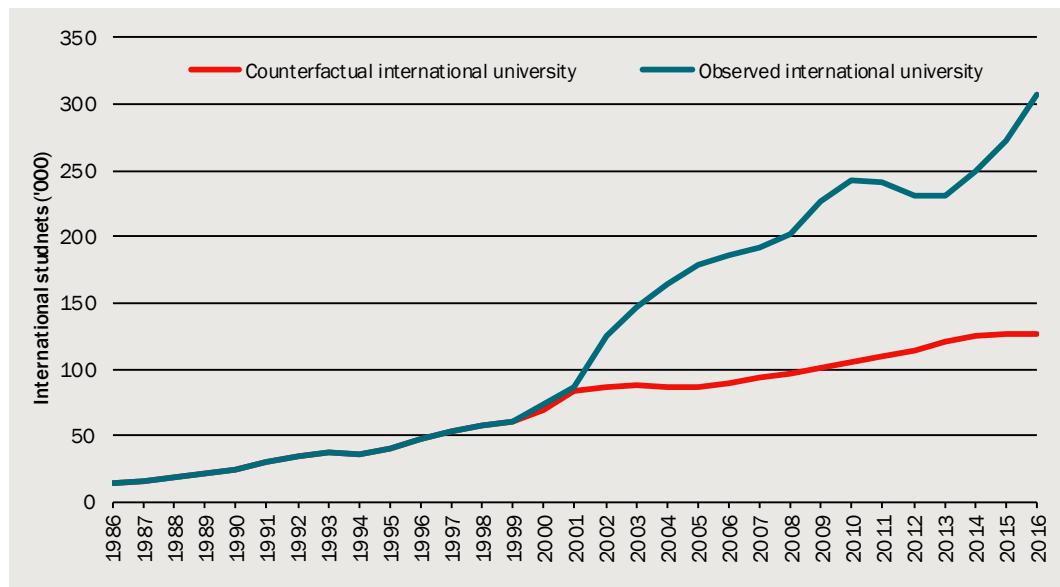
⁵² Spinks, H. 2016, *Overseas students: immigration policy changes 1997–2015*. Parliamentary Library Research Paper.

⁵³ Department of Education and Training 2015, *Higher Education in Australia: A review of reviews from Dawkins to today*.

Modelled counterfactual

The intention of the modelling exercise is to continue policy as it existed in 1986. As discussed above, by this time there was already a plan to increase students, but this plan was still being actively debated. As part of the reforms announced in 1985, a cap was placed at 10 per cent of students in the university sector. At the time this cap was not binding (international students comprised 3.5 per cent of university students and 0.7 per cent of VET students), but can be seen as a guide to the extent of international liberalisation that was being considered. In this report, it is assumed that the 10 per cent cap on international students remains in place to 2016, but that all other policies and trends occurred. As is seen from chart D.2, this assumption generates a counterfactual level of international students attending Australian universities used in this report.

D.2 International students at Australian universities



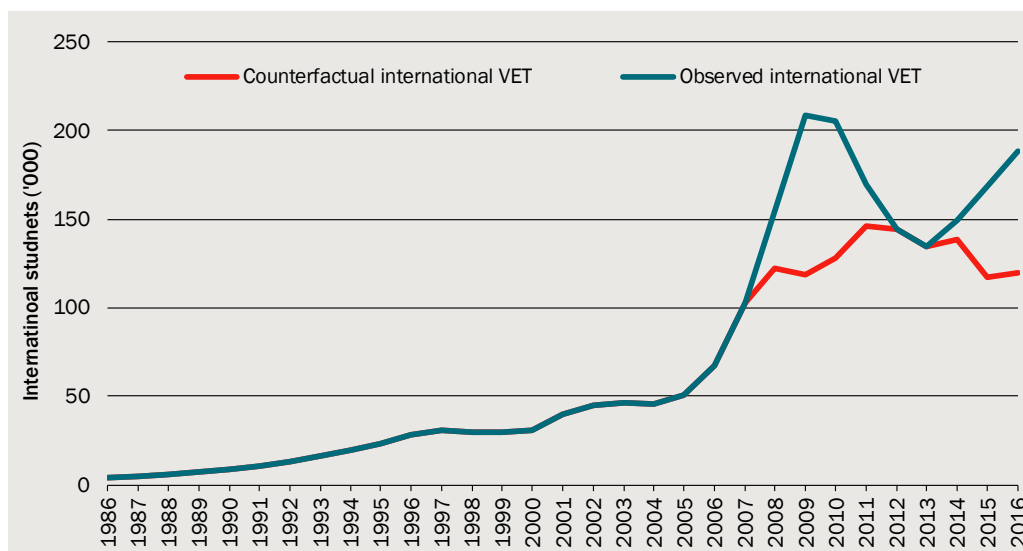
Data source: CIE calculations.

Under this modelling approach, policy reforms that have occurred since 1986 (such as policies that led to the reduction in international students in 2010–12) are picked up in the observed data series, while the counterfactual is held constant at 10 per cent.

The 1986 reform also allowed full fee paying students into the VET sector, and as noted in Meadows (2011), the VET sector increased its intake of international students significantly in the years following the reform.

The 10 per cent cap announced with the introduction of full fee paying students did not apply to the VET sector. However, at the time there were relatively few international students in the VET sector (around 0.7 per cent of total VET enrolment compared to 3.5 per cent in the university sector). Given that the 10 per cent cap was based on a concern around providing access to domestic students, it is reasonable to think that a similar rationale would also have been applied to the VET sector as student numbers increased. Therefore, a 10 per cent cap is also applied to the VET sector in the study. The observed level of International VET students, and the counterfactual level used in this paper, are shown in chart D.3.

D.3 International students in the VET sector



Data source: CIE calculations.

As shown in chart D.3, the cap only binds in 7 years, and still allows a significant increase in the number of international students. It therefore represents a conservative counterfactual of the increased level of international students in this sector as a result of liberalisation.

Modelling the economywide impact of changes student numbers

This reduction in student numbers is converted to a proportion reduction in service exports for each type of education.⁵⁴ For instance, a 10 per cent reduction in university students equates to a 10 per cent reduction in service exports from that sector. The resulting change in education exports is shown in chart 2.3.

These service exports include education fees paid by international students, along with living expenses, such as accommodation, food and transport. The shares of expenditure on different items are decomposed further based on responses to the International Visitors Survey.⁵⁵ This reduction in exports are then matched to model sectors and implemented in the economic model by adjusting the international preference for Australian exports in the appropriate sectors.

The impact of reduced student numbers on the labour force

A reduction in the number of international students will also impact on the Australian labour force. To model this effect, the proportion of international students working, as well as the hours that they work, were taken from the 2016 Census. This work pattern

⁵⁴ ABS, *International Trade, Supplementary Information*, (Cat No. 5368.0.55.004, Table 9.1), reports the value of service exports by type of education.

⁵⁵ International Visitors Survey conducted by Tourism Research Australia includes the breakdown of spending by international students for the years 2013–2016. The average proportions spent on different sectors of the economy was used for all years.

was used to calculate the share of the Australian labour force that is provided by international students in Australia.

This share was then varied in proportion to the change in the number of international students in charts D.2 and D.3 to generate a counterfactual level of labour supply from international students. This resulting reduction in labour supply is shown in chart 2.4.

E Economic analysis methodologies

Quantifying the economic impacts of Australian liberalisation

Quantifying the economic impacts of Australia's merchandise trade, select service trade, and foreign direct investment liberalisation over the period 1986–2016 is a technically challenging exercise. Changes in the Australian economy between 1986 and 2016 reflect a multitude of factors — general productivity improvements, population growth, domestic and international policy reforms, global economic events such as the 2008 Global Financial Crisis, trade liberalisation and (any) trade related productivity gains.

Given the wide range of factors influencing the Australian economy, the economic modelling is not a matter of simply re-imposing the post (for example) 1986 tariff reductions. If this were done, then too much change will be attributed to the trade liberalisation. Rather, account needs to be taken of the factors that have given rise to the Australian economy today. To do this, a series of economic databases were used that reflect the evolving Australian and global economic structures.

The modelling approach has only taken Australian merchandise trade liberalisation (that is, tariff reductions), liberalisation of tourism and education service trade, and multilateral foreign direct investment liberalisation, into account. Liberalisation of other areas of service trade and any liberalisation undertaken by Australia's trading partners has been excluded from the analysis. As a consequence of these omissions, the results of the modelling exercise will likely understate the economic impacts of Australian trade and investment liberalisation over the 1986–2016 period.

General equilibrium modelling — economic effects of liberalisation and protection

The economic modelling results presented in chapter 3 are based on results of analysis using the Global Trade Analysis Project (GTAP) model and the CIE-Regions model. GTAP is a publicly available modelling framework and database managed from the Center for Global Trade Analysis at Purdue University.

The standard GTAP model is a multi-region, multi-sector, computable general equilibrium model, with perfect competition and constant returns to scale. Innovative aspects of this model include:

- the treatment of private household preferences using the non-homothetic constant difference of elasticity functional form
- the explicit treatment of international trade and transport margins, with substitutability between imports by source and domestic production being handled via the Armington assumption

- a global banking sector which intermediates between global savings and consumption.

For the analysis presented in chapter 3, the GTAP model is used to compare the world economy under current tariff rates with the state of the economy had Australian tariff rates remained as they were in 1986.

A key advantage of the GTAP model for this project was the availability of historical databases. The model databases effectively determine the structure of the economies on which the analysis is conducted. The starting economic structure (database) has significant impacts on the modelling results. As the Australian (and world) economy has changed significantly over the past 30 years (for many different reasons, including changes in trade protection), simply increasing tariff rates back to levels seen in 1986 on the current economic structure would provide an unrealistic estimate of the impact of continual tariff reductions over a long time period. Rather, we have used the available historical databases so that the economic structure on which the tariff changes are applied more closely reflect reality. The databases used for the project were GTAP 4 (base year 1995), GTAP 5 (base year 1997), GTAP 6 (base year 2001), and GTAP 9 (base years 2004, 2007, 2011). The results of separate model runs (using each database and the tariff, export and capital stock changes corresponding to the time period between the databases) were compiled to provide an overall impact of 30 years of trade and investment liberalisation.

Distributional impacts of trade and investment liberalisation

The distributional impacts of trade liberalisation (as described in chapter 4 and in further detail in appendix F) were estimated using the results of the general equilibrium modelling (approach described above and the results presented in chapter 3), and a breakdown of household income and consumption patterns by income quintile from the ABS household expenditure survey (HES). The latest available HES results refer to the year 2015-16.

The impact of trade liberalisation on nominal income per household was estimated based on current income by source (employee income, business income and government transfers) and the estimated change in nominal wages, capital income and GDP from the modelling results.

Similarly, the impact of trade liberalisation on expenditure (assuming the same bundle of goods is purchased) was based on current expenditure levels on each of 673 expenditure categories and the modelled change in nominal prices for households at the sectoral level. The details expenditure categories were aggregated to 10 categories for reporting.

Victorian expenditure and income data by income group from the Household Expenditure Survey was not available at time of publication. Therefore, this was proxied by taking the average expenditure on an item (or income) for Victoria, and apportioning this expenditure (income) between income quintiles in the same proportion as observed in the national data.

The distributional impact methodology

Liberalisation and unemployment

One important limitation to the distributional analysis contained in chapter 4 is that it does not consider unemployment. As with most trade modelling exercises, it is assumed that labour markets are fully flexible, and that when an industry reduces output, surplus labour is able to move freely to another industry. Unemployment is a key determinant of inequality, hence if trade and investment liberalisation influences unemployment, it would have an impact on the distributional impact of the policies.

In principle, trade liberalisation could have either a positive or negative impact on employment. On the one hand, some Australian industries (such as the automotive industry) faced declining tariffs which caused a reduction in output and employment in these sectors. While some workers were able to transition to other industries, some faced long periods of unemployment or earlier retirement.⁵⁶ On the other hand, by expanding economic activity, it may be easier for the unemployed to find new jobs in the larger economy. The overall trade-off between tariffs and employment is not well understood. When surveying the literature, Davidson and Matusz⁵⁷ conclude that:

...the mainstream view among economists is that trade has little, if any, impact on the overall level of unemployment. This is true in spite of the fact that there is very little evidence either way on this issue.

Therefore, the reforms considered in this report are likely to have a small, or slightly positive effect on employment, and therefore the actual distributional impact of trade reform is likely to be more progressive than the results in this section. Nevertheless, it remains an area that is not particularly well understood.

The impact of trade on prices of discount goods

A further potential issue is that the type of price changes considered in this report only look at the relative price of different types of goods, as opposed to price changes between high price and low-price versions of similar goods. (For instance, has trade liberalisation had a different price impact on the cheapest version of a t-shirt relative to designer version of the t-shirt?) This effect occurs because the price indices collected by the ABS (and by other international statistical agencies) only look at the price of goods in a product category.

There is some evidence that international trade has reduced the price of low-quality goods more than high quality goods,⁵⁸ and as low-income households are more likely to

⁵⁶ Beer, A et al, 2006, 'An Evaluation of the Impact of Retrenchment at Mitsubishi Focussing on Affected Workers, their Families and Communities: Implications for Human Services Policies and Practices', Flinders University.

⁵⁷ Davidson, C. and Matusz, S. (2004), *International Trade and Labour Markets: Theory, Evidence and Policy Implications*, Upjohn University Press.

⁵⁸ Broda, C. and Romalis, J. 2008, *Inequality and Prices: Does China Benefit the Poor in America*, working paper.

consume these goods, the beneficial expenditure impact will be greater for this group. To the extent that this is true, the distributional impact reported in this section will understate the distributional benefits of international liberalisation.

F Distributional impacts

As discussed in chapter 4, the trade and investment liberalisation that Australia undertook over the 1986–2016 period has resulted in higher incomes and lower expenditure in 2016 (compared to the hypothetical scenario where Australia did not embark on the liberalisation process).

This appendix provides a breakdown of how different household income quintiles have benefited from the process. Households are affected differently by trade liberalisation according to their main source of income, and the products they purchase.

Table F.1 provides a summary of the impact in 2016 of Australian trade and investment liberalisation over 1986–2016 on Victorian household income and expenditure (by income quintile). As can be seen, the economic modelling and HES analysis suggests that as a result of the trade and investment liberalisation, Victorian household incomes are higher and required expenditure (to purchase the same bundle of products) is lower.

F.1 Impact of liberalisation on Victorian household income and expenditure in 2016

		Lowest	Second	Third	Fourth	Highest
Change in income						
Absolute dollar amount	A\$	1 202	2 806	4 744	7 020	12 867
As a share of income	%	5.4	6.4	7.1	7.2	7.3
Change in expenditure						
Absolute dollar amount	A\$	-1 550	-2 521	-3 499	-4 852	-7 714
As a share of income	%	-7.0	-5.8	-5.2	-5.0	-4.4
Total household impact						
Absolute dollar amount	A\$	2 752	5 328	8 243	11 871	20 581
As a share of income	%	12.4	12.2	12.4	12.2	11.7

Source: CIE analysis using the GTAP and CIE-Regions models and the ABS HES.

Changes in Victorian household income due to the liberalisation

The HES identifies three sources of household income — employee income (wage and salary), business income (returns to capital and entrepreneurial spirit), and government transfers. The economic modelling suggests that as a result of the trade and investment liberalisation, in Victoria:

- employee income is 7.1 per cent higher than otherwise (reflecting high wage rates and greater labour supply) in 2016

- business income is 8.6 per cent higher than otherwise in 2016
- government transfers are 4.5 per cent higher than otherwise in 2016.

The modelling results can be used with observed household disposable income figures taken from the HES to derive what household income would have been in the absence of the trade and investment liberalisation. The relevant HES data and calculations across quintiles are reported in table F.2.

F.2 Victorian household disposable income

		Lowest	Second	Third	Fourth	Highest
Observed (with trade and investment liberalisation)						
Source of income (shares)						
Employee income	%	11.0	41.4	75.3	90.8	87.7
Business income	%	15.9	21.8	15.9	8.9	12.0
Government transfers	%	73.1	36.8	8.8	0.3	0.3
Total	%	100.0	100.0	100.0	100.0	100.0
Annual disposable income by source						
Employee income	A\$	2 580	19 173	53 774	94 382	166 111
Business income	A\$	3 740	10 098	11 379	9 301	22 781
Government transfers	A\$	17 146	17 050	6 263	311	568
Total	A\$	23 466	46 321	71 416	103 994	189 460
Counterfactual (no trade and investment liberalisation)						
Source of income (shares)						
Employee income	%	10.8	41.1	75.3	90.9	87.8
Business income	%	15.5	21.4	15.7	8.8	11.9
Government transfers	%	73.7	37.5	9.0	0.3	0.3
Total	%	100.0	100.0	100.0	100.0	100.0
Annual disposable income by source						
Employee income	A\$	2 408	17 901	50 205	88 117	155 086
Business income	A\$	3 442	9 293	10 472	8 559	20 964
Government transfers	A\$	16 414	16 322	5 996	298	543
Total	A\$	22 264	43 515	66 672	96 975	176 593
Change in annual household disposable income						
Absolute amount	A\$	1 202	2 806	4 744	7 020	12 867
As a share of household income	%	5.4	6.4	7.1	7.2	7.3

Source: CIE analysis using the GTAP and CIE-Regions models and the ABS HES.

The percentage increase in household disposable income (due to trade and investment liberalisation) for the lower two quintiles is notable lower than the other quintiles because of their heavy reliance on government transfers. For example, government transfers account for 73 per cent of income households in the lowest income quintile. And as noted above, government transfers experience the smallest increase due to the trade and

investment liberalisation (4.5 per cent versus 7.1 per cent in the case of employee income and 8.6 per cent in the case of business income).

Changes in Victorian household expenditure due to liberalisation

The ABS Household Expenditure Survey provides detailed information about the average household expenditure, by income quintile, on nearly 700 different product categories. Using the estimated impact of trade and investment liberalisation on prices faced by Victorian consumers from the economywide modelling, it is possible to estimate how much more it would have cost to purchase the same bundle of products if the trade and investment liberalisation had not occurred.

The impact on household expenditure will reflect the change in prices attributable to the liberalisation, and the expenditure patterns of households. The trade and investment liberalisation on prices, Table F.3 shows how households across the income quintiles allocate their expenditure

F.3 Victorian household expenditure shares

Area of expenditure	Lowest	Second	Third	Fourth	Highest
	Per cent	Per cent	Per cent	Per cent	Per cent
Housing costs	22.2	19.7	19.2	17.6	14.9
Fuel and power	5.1	3.9	3.4	2.9	2.3
Food, beverages and tobacco	21.6	21.3	21.1	19.9	17.9
Clothing and footwear	3.1	3.6	4.2	4.4	4.6
Household furnishings, equip. and services	7.0	7.5	6.5	6.9	7.2
Communication	4.1	3.8	3.6	3.3	2.6
Education	1.8	2.3	2.5	3.8	4.2
Medical, health and personal care	8.1	8.2	7.6	7.2	7.1
Transport and recreation	21.7	24.5	26.3	27.9	31.0
Miscellaneous	5.4	5.0	5.7	6.1	8.2
Total	100.0	100.0	100.0	100.0	100.0

Source: CIE analysis using the GTAP and CIE-Regions models and the ABS HES.

The impact of liberalisation on expenditure by households differs based on the products the household consumes. For the lowest income quintile, over 22 per cent of expenditure is on housing, with early another 22 per cent of expenditure going towards food and beverages. These product categories are not import intensive and therefore have relatively small changes in prices due to the trade and investment liberalisation. The highest income quintile, however, spend a greater proportion of expenditure on transport and recreation, where prices are affected more by liberalisation (especially the lowering of automotive tariffs by some 56 percentage points). Households in the highest income quintile also allocate the greatest share of expenditure on clothing and footwear, with these products experiencing large price reductions following the reduction in tariffs on clothing and footwear imports.

Table F.4 reports the change in household expenditure attributable to the trade and investment liberalisation undertaken over 1986–2016. Households in the highest income quintile benefit the most by virtue of their greater absolute expenditure, and the fact that a large component of their expenditure is accounted for by products that experience large price reductions following the trade and investment liberalisation.

F.4 Impact of liberalisation on Victorian household expenditure

Area of expenditure	Lowest	Second	Third	Fourth	Highest
	A\$	A\$	A\$	A\$	A\$
Housing costs	-271	-362	-450	-442	-446
Fuel and power	-29	-35	-41	-45	-55
Food, beverages and tobacco	-111	-168	-228	-273	-381
Clothing and footwear	-256	-453	-723	-1008	-1608
Household furnishings, equip. and services	-209	-389	-431	-534	-905
Communication	-32	-47	-60	-68	-91
Education	8	16	24	46	80
Medical, health and personal care	-77	-109	-123	-161	-200
Transport and recreation	-518	-880	-1303	-2151	-3728
Miscellaneous	-55	-95	-163	-216	-380
Total	-1 550	-2 521	-3 499	-4 852	-7 714

Source: CIE analysis using the GTAP and CIE-Regions models and the ABS HES.



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