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THE EFFECTS OF A FREE TRADE AGREEMENT BETWEEN AUSTRALIA AND THE USA WITH SPECIAL REFERENCE TO THE VICTORIAN ECONOMY: MAIN REPORT

by

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The Centre of Policy Studies (COPS) is a research centre at Monash University devoted to quantitative analysis of issues relevant to Australian economic policy.

Abstract

This paper documents analysis of the economic effects of the proposed free trade agreement between Australia and the USA using a specially-built dynamic version of the GTAP world general equilibrium model. At the core of the new model is the standard GTAP Version 6.0 framework, released in April 2001. Onto this basis we add the following.

- A series of new variables representing useful aggregates of primary agricultural and agriculture-related sectoral outputs, exports and imports. These do not alter the basic theory of GTAP in any way and are merely defined for convenience.
- New variables and equations which furnish GTAP with simple dynamic behaviour. These allow us to run linked annual GTAP simulations for each year between 1997 and 2023. For each region, the new equations: (a) link net investment in each year to the change in the capital stock for that year; (b) allow employment to respond temporarily to changes in real wage rates; and (c) allow rates of return to capital to respond temporarily to changes in demands for capital. In the long run, all 3 dynamic equations reduce to simpler forms: investment moves in proportion to capital stock; and employment and rates of return converge to baseline trend levels.
- A tops-down regional disaggregation facility which allows results at the national level for output and employment to be disaggregated first to the state/territory level and then to the level of 56 sub-state regions.

In reporting our results we concentrate on findings for the Victorian economy and for its eleven sub-state regions. Our main findings are:

- Cuts in protection associated with the FTA lead to increased employment, increased capital and higher real wage rates in Australia and the USA;
- The effects of the agreement vary across industries. The mechanisms, however, are fairly straightforward, depending primarily on the extent to which the protection cuts exposes sectors to additional import competition and on each sector's export orientation.
- The states that gain most from the FTA are Queensland, Western Australia and Tasmania. The states that gain least are Victoria and South Australia. However, it should be noted that all states gain, and that the difference between the increase in real GSP for the state that gains most (Western Australia) and the state that gains least (Victoria) is only 0.09 percentage points.
- An implication of our regional methodology is that regions with an over-representation of favourably affected "national" industries gain at the expense of regions with an under-representation of such industries. Victoria gains least because it is over-represented in industries least favourably affected by the FTA. Prominent among these is Motor vehicles.
- In the long-run year, the Victorian sub-state regions that gain most from the FTA are the Western District (real GRP up 0.47 per cent *c.f.* an increase in Victoria's real GSP of 0.13 per cent), Wimmera (real GRP up 0.39 per cent), Goulbourn (0.38 per cent) and the Mallee (0.37 per cent). All regions are projected to experience increased real GSP as a result of the FTA, but Melbourne and Barwon are expected to expand least. In terms of employment, the FTA results in net job loss in Melbourne and Barwon.

Key words: Multiregional, CGE, trade, liberalisation, dynamics.

JEL: C68 Computable General Equilibrium Models, F15 Economic Integration, R13 General Equilibrium and Welfare Analysis of Regional Economies

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Figures and Tables

1. Introduction

This report documents analysis of the economic effects of the proposed AUS/USA free trade agreement using a specially-built dynamic version of the GTAP world general equilibrium model.[1] The work has been undertaken by the Centre of Policy Studies (CoPS) for the Victorian Department of Premier and Cabinet, and draws partly on an earlier report commissioned by the Allen Consulting Group.

Two scenarios are modelled. The first is a baseline projection. The baseline is a sequence of annual forecasts for the global economy, constructed using external forecasts for macro variables and for rates of import protection and export subsidies. In effect, the baseline shows what might be expected to happen if there was no AUS/USA free trade agreement (FTA). The second scenario involves across-the-board elimination of all forms of import and export taxes on AUS/USA merchandise trade (including trade in primary and secondary agricultural products). The cuts are implemented gradually over a four-year period, 2004 to 2007. Standard modelling assumptions apply, including the assumption that real wage rates adjust to keep employment fixed in the long-run. This means that in both regions the FTA has no long-run effect on national employment. Any long-run changes in the national labour market are revealed as changes in the national real wage rate rather than as changes in national employment. Another standard assumption maintained in our analysis is that the FTA does not affect production technologies. Thus we do not make allowance for improved efficiencies that might accompany increased competitive pressures.

The rest of this document is organised as follows. The version of the GTAP model used in this study is explained in Section 2. Details of the baseline are given in Section 3. Having produced the baseline, we next generate a revised forecast, including shocks through time to represent the alternative scenario described above. The effects of these shocks are reported in Section 4 as deviations between the values of variables in the revised forecast and their values in the baseline.

2. The GTAP model

This section has three parts. An overview of the static core of the GTAP model is given in Section 2.1. Section 2.2 summarises the model's database.[2] Finally, in Section 2.3 we describe the modifications that transform the static model into a dynamic one and that allow us to report detailed regional results for Australia.

2.1 The static core

GTAP is a multi-region CGE model designed for comparative-static analysis of trade policy issues. The version of the model taken as a starting point for this study is as documented in Hertel (1996). Our version distinguishes the 10 regions shown in Table 1, and the 39 single-product sectors shown in Table 2. In addition to the 39 sectors there are three other agents in each region: a capital creator, a household and the government.

GTAP determines regional supplies and demands of goods and services through optimising behaviour of agents in competitive markets. Optimising behaviour also determines sector demands for primary factors, i.e., labour, capital, land and natural resources. In each

[1] Using a dynamic model allows us to trace the effects of a FTA through real time. It also allows us to phase in the changes in trade taxes that accompany the FTA. Conventional comparative-static analysis does not allow for explicit dating, or for the short and medium effects of a phased program of tax changes.

[2] The database notionally reflects the year 1997. It is updated via model simulation to the year 2004, which is the starting point for our deviations simulations.

region there are two types of labour (skilled and unskilled) and a single, homogenous capital good. In standard long-run comparative static applications of the model, total supplies of labour, land and natural resources are fixed for each region, while capital can cross regional borders to equalise percentage changes in rates of return.

The modelling of each regional economy in GTAP is based on ORANI, a single region model of Australia (Dixon, e al. 1982). However, unlike ORANI, GTAP models inter-regional linkages arising from the flows of tradable goods and services and of capital. In doing so it ensures that each region's total exports equal total imports of these goods by other regions.

The basic theoretical assumptions made in GTAP are as follows.

Markets

Demand equals supply in all markets. Each market is assumed to be competitive, implying equality between the price received by the producer and the producer's marginal cost. Regional governments intervene in their own markets by imposing taxes and subsidies on commodities and primary factors, thus driving wedges between prices paid by purchasers and prices received by producers.

In markets for traded commodities, buyers differentiate between domestically produced products and imported products with the same name.[3] Product differentiation is also allowed between imports by region of origin. This allows for two-way trade across regions in each tradable product.

Input demands for production of commodities

Two broad categories of inputs to production are recognised: intermediate inputs and primary factors. In every region, each sector is assumed to choose the mix of inputs to minimise total cost for a given level of output. Sectors are constrained in their choice of inputs by a three-level nested production technology. At the first level, intermediate-input bundles and primary-factor bundles are used in fixed proportions. At the second level, intermediate input bundles are formed as combinations of imported bundles and domestic goods with the same name, and primary-factor bundles are formed as combinations of labour, capital and land. In both cases the aggregator function has a Constant Elasticity of Substitution (CES) form. At the third level, imported bundles are formed as CES combinations of imported goods with the same name from each region.

Household demands

Each region has a single representative household. Aggregate household expenditure is determined as a constant share of total regional income (household consumption plus government expenditure plus national savings). The household buys bundles of commodities to maximise utility subject to its expenditure constraint.[4] The bundles are CES combinations of domestic goods and import bundles, with the import bundles being CES aggregations of imports from each region.

Demands for inputs to capital creation and the determination of investment

The cost-minimising capital creator in each region combines inputs to assemble units of capital, subject to a nested production technology similar to that facing each sector for current production. The only difference is that the capital creator does not use primary factors. The use

[3] Allowing for the possibility that imported products may not be perfectly substitutable for the corresponding domestic product is an idea first put forward in Armington (1969).

[4] GTAP represents consumer demands using the Constant Difference Elasticity implicit expenditure function.

of primary factors in capital creation is recognised indirectly through inputs of commodities to capital construction.

Investment in each region is financed from a global pool of savings. Each region contributes a fixed proportion of its income to the savings pool. In standard GTAP, there are two alternative ways that this pool is allocated to investment in each region. The first makes investment in each region a fixed proportion of the overall size of the pool. Thus if the pool increases by 10 per cent, investment in each region increases by 10 per cent. The second relates investment allocation to relative rates of return. Regions that experience increases in their rate of return relative to the global average will receive increased shares of the investment budget, whereas regions experiencing reductions in their rate of return relative to the global average will receive reduced shares

Government demands for commodities

The share of aggregate government expenditure in each region's income is held fixed. Government expenditure is allocated across commodities by a Cobb-Douglas distribution. The allocation of total expenditure on each good to domestically produced and imported versions is based on the same nesting scheme used to allocate total household expenditure on each good.

2.2 Database

The GTAP data base comprises: input/output data for each region; bilateral trade data derived from United Nations trade statistics; and support and protection data derived from a number of sources. The simulations reported in this study are based on version 5 of the database, as described in McDougall and Dimaranan (2001). The database contains estimates of production costs, final demand values, bilateral trade values and various tax levels for 1997.

The levels of import protection on AUS imports from the USA and on USA imports from AUS are summarised in Table 3. This table shows for both regions, trade-weighted averages of bilateral *ad valorem* import tariffs (and tariff equivalents of bilateral non-tariff barriers) levied on imports.[5] Data for 1997 come directly from the GTAP database. Next to the 1997 data are estimates for 2004 taken from our baseline projection (see Section 3). According to our baseline, in 2004 AUS imposes rates of protection of over five per cent on USA imports of Dairy products, Textiles, clothing and footwear, Non-metallic building products and Metal products. Note that the applied rate of tariff on motor vehicles and parts in 2004 is estimated to be 4.7 per cent. Note too that the negative tariffs shown for wool are irrelevant since there are not imports of USA wool into AUS. In the USA, rates of over five per cent apply to AUS imports of Crops (excluding grains), Dairy products, Textiles, and Clothing and footwear.

The US dollar value of AUS imports in the USA and of USA imports in AUS are summarised in Table 4. In both cases imports are dominated by imports of manufactured products and services.

2.3 Modifications to GTAP for this study

The model used in this study was based on the standard GTAP Version 6.0 model, released April 2001. Onto this basis we add the following.

- A series of new variables representing useful aggregates of primary agricultural and agriculture-related sectoral outputs, exports and imports. These did not alter the basic theory of GTAP in any way and were merely defined for convenience.

[5] The GTAP data do not include protection data for services.

- New variables and equations that furnish GTAP with simple dynamic behaviour.[6] These allowed us to run linked annual GTAP simulations for each year between 1997 and 2020. For each region, the new equations:
  - linked net investment in each year to the change in the capital stock for that year.
  - allowed employment to respond temporarily to changes in real wage rates.
  - allowed rates of return to capital to respond temporarily to changes in capital demands.
- New variables and equations that allow GTAP results for Australia-wide output and employment by industry to be disaggregated down to results for output and employment by state and by sub-state region.

In the long run, all 3 dynamic equations reduce to simpler forms: investment moves in proportion to capital stock; and employment and rates of return converge to baseline trend levels. Additionally, all three dynamic equations were over-ridden by exogenous information in our baseline scenario. They affect only the adjustment paths to the new long-run equilibrium in our deviation scenarios.

The regional disaggregation for Australia is based on a two-stage tops-down method employed in the Monash model of the Australian economy (Dixon and Rimmer, 2002). This enables Australia-wide results for output and employment (as generated by GTAP) to be disaggregated, first to the state level, then to the finer level of statistical divisions. In each stage, the disaggregated projections are consistent with results at the immediately higher level, i.e., the results for the states aggregate to the Australian results as projected by GTAP, and the regions for regions in each state aggregate to the state results. The method is an adaptation of the regional disaggregation method first applied to sub-state regions in Australia by Adams and Dixon (1995).

Further details of regional disaggregation facility are given below.

2.3.1 Regional disaggregation: National (GTAP) to state

The first step in the disaggregation to states is to allocate each of the GTAP commodities (Table 3) to one of two groups: national and local. Commodities classed as national are traded extensively across state borders. Examples are the agricultural and mining commodities. Local commodities are those for which demand in each state is satisfied mainly from production in the state. Examples include perishable food items, and services like Trade services.

For industries that produce national commodities, the disaggregation usually allocates to each state the same growth rate in output. For local commodities, the facility imposes market clearing in each state. Hence, the output growth rates in each state of local industries (those producing local commodities) are set equal to the rates of growth in demand for their products in each state. In calculating the local demand for the output of local industry j, the disaggregation facility takes account of:

1. intermediate and investment demands both by local industries and by national industries located in the state;
2. the state's household demands, which are a function of population and employment changes and of the change in consumption at the national level; and
3. government demand.

Currently 30 of the 39 GTAP commodities are declared to be national. The remaining 9 commodities, accounting for almost 60 per cent of Australia's GDP, are local. By allowing for

[6] The dynamics added to the GTAP model for this study are similar in style to those detailed in Ianchovichina and McDougall (2000)

local commodities in the stage-1 calculations, we introduce state multiplier effects. If a state has an over-representation of fast-growing national industries, then the effect on its overall growth is multiplied through fast-growth in its local industries.

An attractive feature of the states dissaggregations is that its data requirements are modest. They are satisfied by having for the base year (1997) state shares in total production for national commodities and final demands by state for local commodities. Since for national commodities we assume that the regional pattern of production is independent of the pattern of demand, no data are required for these commodities on their sales patterns across states. For local commodities, it is assumed that the economy-wide GTAP input-output coefficients relating to their usage apply at the state level. Thus, we do not need information on state technologies.

2.3.2 Regional disaggregation: State to sub-state region

Stage 2 of the regional facility disaggregates the projections for states obtained in stage 1 to 56 regions, of which eleven are in Victoria: Melbourne, Barwon, Western District, Central Highlands, Wimmera, Mallee, Loddon-Campaspe, Goulbourn, Ovens-Murray, East Gippsland and Gippsland. As in state 1, in stage 2 each of GTAP's 39 commodities is classified to one of two categories: here called national-region and local-region. National-region commodities are those that are readily traded across regional boundaries. The regional outputs of industries producing national-region commodities are assumed to grow in line with the statewide growth rates calculated in stage 1.

Local-region commodities are those for which demand within each region is satisfied mainly from production in that region. The outputs in each region of industries producing local-region commodities are modelled as depending mainly on demand within the region. This gives our stage-2 calculations a similar multiplier property to that in the stage-1 calculation: the effect on a region's growth of a favourable mix of national-region industries is multiplied through induced effects on the growth rates of the region's local-region industries.

The minimal data requirements for the stage-2 allocation of state projections to regions are base-year data for value added by industry in each Statistical division. For this study these data were compiled using detailed labour-force data for employment by industry which were used to allocated across regions the state-wide value added data used in stage 1.

3. Baseline Projection

In generating the baseline projection, we use forecasts for key supply-side macroeconomic variables and assumptions for changes in import protection and export taxes based on data provided by Terrie Walmsley, a researcher associated with the GTAP project. These forecasts are recent revisions of those documented in Walmsley *et al.* (2000). They are mainly based on the World Bank's Global Economic Perspectives Data Base. For Australia we supplement Walmsley's data with information on changes in rates of import protection and export subsidies between 2001 and 2005, which reflect announced plans (including the FTAs between Australia and Thailand and between Australia and Singapore).

Volume of bilateral trade between AUS and USA (Table 8)

Table 8 gives baseline projections for the volume of AUS/USA bilateral trade by commodity. These are expressed as average annual growth rates between 1997 and 2020. The total volume of AUS exports to the USA is projected to grow at an average annual rate of 0.9 per cent. This is well below the projected growth rate for USA exports to AUS. The disparity in growth rates is greatest for primary and related agricultural products, with growth in AUS agricultural exports to the USA projected to be around four percentage points below that of growth in USA agricultural exports to AUS.

4. The effects of the AUS/USA free trade agreement

Aspects of the experiment design for the free trade scenarios are discussed in Section 4.1. Simulation results for each of the four alternative scenarios are examined in Section 4.2.

4.1 Experiment design

The following general assumptions are made for the free-trade scenarios.

Labour markets

We assume that in each region deviations in the average real wage rate (i.e., in the average nominal wage rate deflated by the CPI) from its baseline level increase in proportion to the deviation in total employment from its baseline level. The coefficient of proportionality is chosen so that the aggregate employment effects of a shock are largely eliminated after five years. In other words, after about five years, the benefits (costs) of a favourable (unfavourable) shock are realised almost entirely as an increase (fall) in the national real wage rate, rather than as an increase (decline) in employment. This labour market assumption reflects the idea that in the long-run national employment is determined by demographic factors, which are largely unaffected by changes in trade policies. It is also consistent with conventional macro-economic modelling in which the long-run rate of unemployment is treated as a constant.

Taxes and government budget balances

We assume that the shocks associated with the free trade agreement make no difference to the paths of commodity taxes other than trade taxes in AUS and the USA. We also assume no deviation in the paths of government budget balances, through implicit adjustments in direct tax rates or in transfer payments.

Private consumption, government consumption, saving and investment.

Private and public consumption expenditures and nominal savings in each region are assumed to move with regional income. We assume that in each region, investment will deviate from its baseline value in line with the deviation in capital.

Rates of return on capital

In deviation simulations our dynamic version of GTAP allows for short-run divergences in rates of return on regional capital stocks from their levels in the baseline. Such divergences cause divergences in capital and hence in investment. The divergences in capital stocks gradually erode the divergences in rates of return, so that in the long-run rates of return in each region return to their baseline levels.

Production technologies

GTAP contains many types of technical change variables. In the deviation simulation we assume that all technology variables have the same values as in the baseline simulation.

4.2. Impacts of the FTA

The main effects of the AUS/USA free trade agreement are given in a series of tables. These show, for the period 2004 to 2020, deviations of a range of variables from their values in the baseline projection. There are eight tables:

Table A1: Macroeconomic variables (percentage deviations from baseline values);

Table A2: Industry output (percentage deviations from baseline values);

Table A3: Trade volumes by commodity (percentage deviations from baseline values);

Table A4: Australian regional variables (percentage deviations from baseline values);

Table A5: Australian regional variables (absolute deviations from baseline values);

Table A6: Contributions to the differences in GSP deviations (%) in 2020;

Table A7: Contributions to the differences in Victorian GRP deviations (%) in 2020; and

Table A8: Industry employment in Victoria and Victorian sub-state regions in 2020 (absolute ('000 persons) deviations).

The first table shows year-to-year percentage deviations in a range of macroeconomic variables, including the real components of demand, real GDP and employment. The second table contains year-to-year deviations in the output of each industry in AUS and the USA. The third table gives year-to-year percentage deviations in bilateral trade volumes, by commodity, between AUS and the USA. Tables A4 and A5 show outcomes for real value added and employment in each state and territory and in each Victorian sub-state region. Information in Tables A6 and A7 help us to understand why some states do better than other states, and why some Victorian regions do better than other Victorian regions. The final table contains Victorian-specific data on deviations in the number of people employed. This information assists in the evaluation of several hypotheses in the conclusion.

4.2.1 National results

Our explanation is given in a series of numbered points. Italicised headings to the numbered points outline the main structure of the explanation. The explanation focuses mainly on outcomes for Australia, Victoria and Victorian regions.

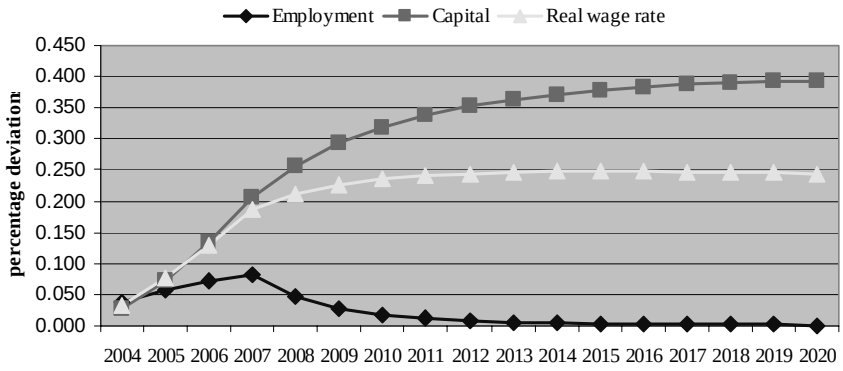
I. *The initial (2004) cuts in merchandise trade taxes lead to increased employment.* Table A1 shows that in 2004 the initial cuts in protection cause employment in AUS to increase, relative to its baseline value, by 0.036 per cent. This reflects, in the main, the impacts of the cuts in AUS's own import protection. These put a wedge between the price of expenditure (the price of consumption for example) and the price received by producers (the price of GDP at factor cost[7]). With the real wage rate from the employee's point of view (i.e., the nominal wage rate deflated by the price of consumption) assumed to be sticky in the short run, the nominal wage diverges only slowly from the price of consumption. Hence, initially, the cuts in tariffs cause the nominal wage to fall relative to the price of output, leading to a reduction in the real cost of labour and to increased employment.

II. *In the period 2004 to 2007, successive cuts in protection lead to increases in capital and real wage rates with relatively mild increasing deviations in employment (see Figure 1A).* According to the labour-market specification in our dynamic version of GTAP, if employment is above its baseline level, employees will demand an increase in their real wage rate. This strengthens producers' incentive to substitute capital for labour, leading to an increase in the capital/labour ratio. It follows that the progressive cuts in protection between 2004 and 2007, which put upward pressure on employment, lead to successive increases in the real wage rate and capital. Over this period the employment deviations are increase, but only mildly, because the upward pressure on employment arising from the protection cuts is partly outweighed by the real wage adjustment. In 2007, relative to baseline levels, total employment has increased by 0.082 per cent, capital by 0.206 per cent, and real wage rates by 0.22 per cent.

[7] The price of GDP at factor cost is a weighted average of the prices of primary factors (land, unskilled labour, skilled labour, capital and natural resources). The price of GDP at market prices is a weighted average of the prices of primary factors plus the unit cost of indirect taxes net of subsidies. All else unchanged, cuts in protection lower the unit cost of indirect taxes, leading to a fall in the price of GDP at market prices relative to the price of GDP at factor cost.

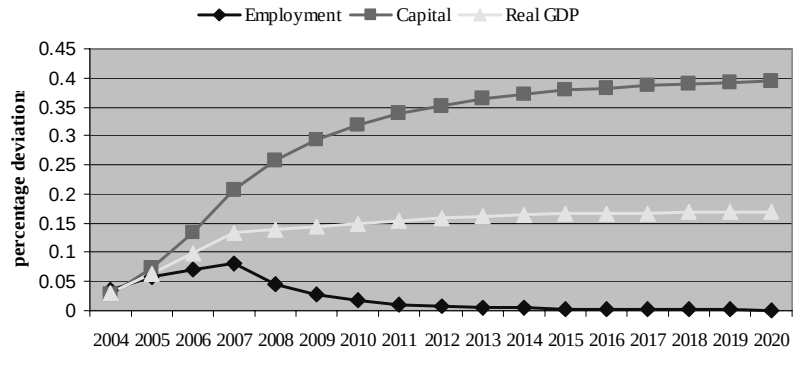
III. *After 2007, employment moves back to its baseline level, while capital and real wages progressively increase relative to their base levels (Figure 1A).* In the years following the last year of protection cuts the dynamic mechanisms in the model move the economy towards a position of long-run equilibrium. In the long-run, the deviations in employment and in the rate of return on capital (the nominal rental on capital relative to the price of investment) have been eliminated. With the rate of return on capital fixed the real cost of capital becomes the dominant influence on factor inputs. The real cost of capital is the nominal unit-cost of capital deflated by the price of output (the price of GDP at factor cost). With the rate of return constrained, the nominal capital rental is effectively indexed to the price of investment. The cuts in protection cause the price of investment, like the price of consumption, to fall relative to the price of output. The fall in the price of investment relative to the price of output reduces the real cost of capital, causing capital to expand (Figure 1A). In the final year of the simulation (2020), the economy has almost fully adjusted to a new long-run equilibrium, with the employment deviation almost eliminated. At this point, capital and the real wage rate have each increased relative to their baseline values: capital by 0.4 per cent, and the real wage rate by 0.3 per cent.

Figure 1A: Employment, Capital and Real Wages - AUS
(percentage deviations from base)



IV. *Cuts in protection lead to increased real GDP (see Figure 2A).* The deviations in real GDP reflect a weighted average of deviations in factor inputs. Accordingly, real GDP is elevated above its baseline level in each year of the simulation. In the long-run year the deviation is 0.17 per cent (see Table A1). It can be shown that this deviation is proportional to the percentage change in the real cost of capital directly due to the cut in AUS protection (see Box 1).

Figure 2A: Factor Inputs and Real GDP - AUS
(percentage deviations from base)



Box 1: The size of the long-run GDP effect

The equation below provides a generally good approximation to the true long-run change in real GDP arising from a cut in import protection. By "true long-run change" we mean the conventional long-run comparative static solution, in which, following an exogenous shock, the real wage rate and capital have adjusted to force national employment and the rate of return on capital back to their baseline levels. The approximation is based on the following observations (see Adams, 2003):

1. that in the long-run the percentage change in a weighted average of factor inputs (labour and capital) arising from a cut in protection is inversely proportional to the percentage change in real cost of capital; and

2. that in the long-run the percentage reduction in real cost of capital resulting from a protection cut is approximately the value of the protection removed as a percentage of GDP adjusted for changes in the terms of trade.

Combining these ideas yields, after some formal mathematical manipulation, the following approximation for the long-run percentage deviation in real GDP,

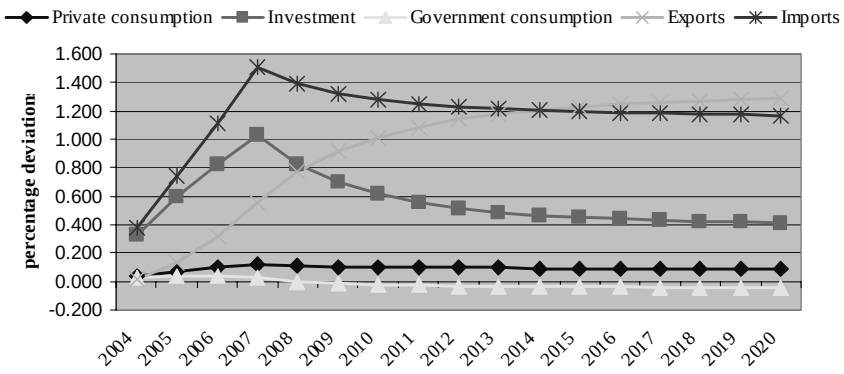
$$gdp = \left\{ \frac{S_K \times \sigma_{KL}}{1 - S_K} \right\} \times (-t + S_{trade} \times tot) \qquad (1),$$

where: S_K is the share of the cost of capital in GDP, σ_{KL} is the capital to labour substitution elasticity, *t* is the value of the tariff change as a percentage of GDP, S_{trade} is the share of exports in GDP, and *tot* is the percentage deviation in the terms of trade. Calibrating using baseline data for 2020 yields values for the coefficient in curly brackets of 0.95 (AUS) and 1.06 (USA). The value of the tariff change as a percentage of GDP in 2023 is -0.15 (AUS) and -0.002 (USA). In both cases the terms of trade effect is negligible. Applying these values in (1) yields approximations to the long-run percentage deviation in real GDP of 0.14 per cent (AUS) and 0.003 per cent (USA). These compare to the "true" projected values of 0.170 per cent and 0.004 per cent.

V. *Real private consumption rises (Figure 3A), but by less than real GDP.* Figure 3A shows that the free trade agreement increases real private consumption in AUS. However, the percentage increases in consumption are smaller than the percentage increases in real GDP. In GTAP *nominal* private consumption moves with *nominal* Net Gross Product (NGP). Nominal NGP is nominal GDP less depreciation. In a simulation where capital increases the cost of depreciation also rises causing nominal NGP to fall relative to nominal GDP. This is the main reason why real private consumption falls relative to real GDP. Another influence is the terms of trade decline (see point X). A reduction in the terms of trade generally increases the price of consumption (which includes the price of imports but not the price of exports) relative to the prices of NGP and GDP (which include the price of exports but not the price of imports). It therefore reduces real consumption per dollar of real NGP.

VI. *Real investment increases (Figure 3A) to accommodate the increase in capital.* With capital progressively rising above base (Figure 2A), investment must remain above its baseline levels. In 2023, the investment deviation is 0.42 per cent (Table A1).

Figure 3A: Expenditure Components of Real GDP - AUS
(percentage deviations from base)



VII. *Real government consumption initially increases then falls relative to baseline levels (Figure 3A).* Like private consumption, nominal government consumption moves with nominal NGP. However, the deviations in real government consumption are weaker than the deviations in real private consumption, and become negative after 2007. This contrast between deviations in real government and real private consumption is due to contrasting impacts on the respective prices. In each year, the agreement causes the price of government consumption to rise relative to the price of private consumption. This is because, relative to private consumption, public consumption is more oriented towards the purchase of services that are labour intensive. It follows that in a simulation where the real wage rate rises relative to its baseline level that the price of public consumption will tend to increase relative to the price of private consumption.

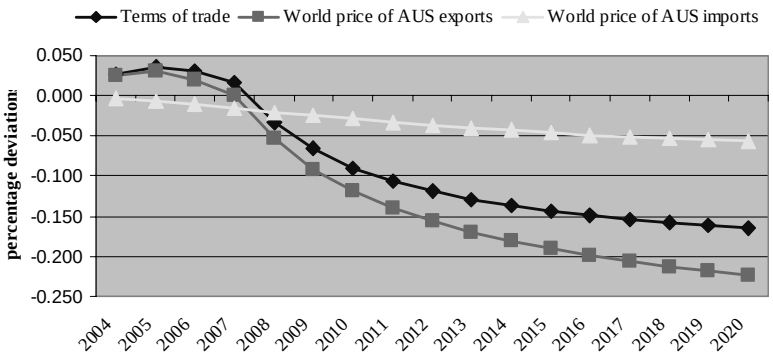
VIII. *Through the first half of the simulation period real gross national expenditure (GNE)[8] rises relative to real GDP, causing the balance between export and import volumes to deteriorate (Figure 3A). This is reversed in the second half of the period.* Throughout the simulation period real private and public consumption (C and G) fall relative to real GDP (Y), while real investment (I) increases. The increase in investment relative to GDP in the first half of the period, though, is a little stronger than the increase in the second half, causing real GNE (C+I+G) to increase relative to real GDP in the first half, but to decrease in the second half. Movements in the balance between export and import volumes (X-M) mirror the movement in real GNE relative to real GDP. Thus in the first half of the period the volume of net trade deteriorates compared to its baseline level, while in the second half it improves.

IX. *The FTA is trade enhancing with imports and exports rising (Figure 3A).* The changes in the volume of trade noted above are very mild. Generally, in each year the deviation in export volume more or less matches the deviation in import volume. The cuts in protection lead directly to increases in imports. Matching increases in exports are brought about by a combination of cuts in USA protection against AUS imports and real exchange rate devaluation. Changes in the real exchange rate bring about the necessary changes in X-M that reconcile movements in Y with movements in C+I+G. Devaluation

[8] The percentage change in real GNE is the weighted average of percentage changes in real private consumption, real public consumption and real investment.

of the real exchange is indicated by a reduction in the domestic cost of production (the GDP deflator at factor cost) relative to the average cost of production elsewhere. Real devaluation means improved competitiveness for local producers, and hence increased exports and reduced imports. Overall, as a result of the bilateral cuts in protection and changes in the real exchange rate in 2020, relative to baseline levels, the volume of AUS imports rises 1.17 per cent and the volume of exports rises 1.29 per cent.

Figure 4A: Terms of Trade - AUS
(percentage deviations from base)



X. *Falls relative to base in the terms of trade eventually accompany the cuts in protection (Figure 4A).* In the first few years of the simulation AUS's terms of trade improve relative to baseline levels. Thereafter the terms of trade steadily deteriorate. Figure 4A shows that the deviations in the terms of trade closely match the deviations in the world price of AUS exports. The world price of AUS imports changes little from baseline values. In this simulation, the deviations in export price are the net outcome of two offsetting influences. Cuts in USA protection increase the demand for AUS exports and hence put upward pressure on the world price of AUS exports. Offsetting this is real exchange rate devaluation which tends to lower the price of AUS products on world markets. In the early years of the simulation the impacts of USA protection cuts just outweigh the impacts of real devaluation. Gradually, though, the influence of the USA cuts dissipates and the real devaluations become the dominant influence on AUS's terms of trade.

Deterioration in the terms of trade has a generally negative impact on real GDP (see Box 1)and real consumption. All else unchanged, it increases the price of expenditure relative to output (see point V). This reduces the amount of real consumption per dollar of real income. It also increases the real cost of labour when, in the short-run, real wages are fixed and the real cost of capital when, in the long-run, capital's rate of return is fixed. Ultimately both of these effects reduce real GDP, offsetting to some extent the positive impacts of the protection cuts (see points I to IV).

XI. *For some AUS industries cuts in protection significantly raise output relative to base in the long run.* Table A2 shows projections of the percentage change in industry output in AUS and the USA due to the FTA. The effects of the agreement vary across industries. The mechanisms, however, are fairly straightforward, depending primarily on the extent to which the protections cuts expose sectors to additional import competition and on each sector's export orientation. Data on levels of import competition and export orientation, along with information on sales patterns generally are given in Table 5.

Figure 5A: Most Favourably Affected Industries- AUS
(percentage output deviations from base)

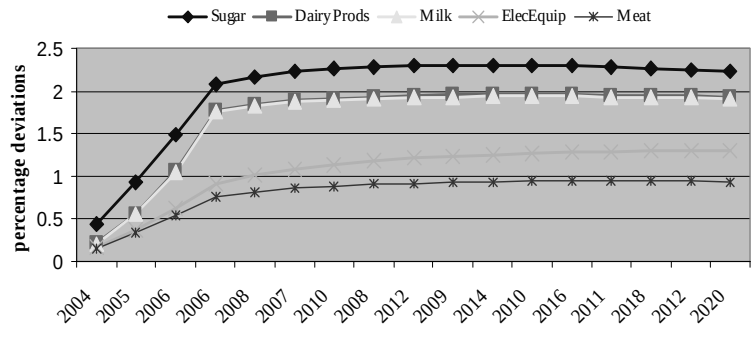


Figure 5A shows deviations in output for the (five) most favourably affected AUS industries.[9] Of these, the most favourably affected AUS sector is Sugar. It has an especially high USA-export propensity of 8.4 per cent (Table 5), and it faces negligible competition from USA imports (Table 5). Thus, even though the initial rate of protection against AUS sugar in the USA is quite low (6.3 per cent, Table 3) removing this protection yields considerable benefit to the AUS industry, with exports to the USA increasing by 28.3 per cent relative to base in the long run year (Table A3).

The next most favourably affected AUS sectors are Dairy products and the related Raw milk industry.. This reflects the very high initial rate of protection against AUS dairy imports into the USA (Table 3). Thus, even though two-way trade in dairy between AUS and the USA is small relative to overall sales for each industry (see Table 5), eliminating protection against AUS imports in the USA imparts considerable benefit to the Australian dairy industries. Table A3 shows that removing protection increases AUS dairy imports into the USA by nearly 270 per cent.

The fourth most favourably affected industry is other Electronic equipment. The USA-export propensity for this industry is relatively high, at 3.1 per cent (Table 5). Thus, even though the initial rate of protection affecting exports to the USA is quite small (Table 3), free trade leads to a significant increase in output for the AUS industry based on increased exports to the USA (Table A3).

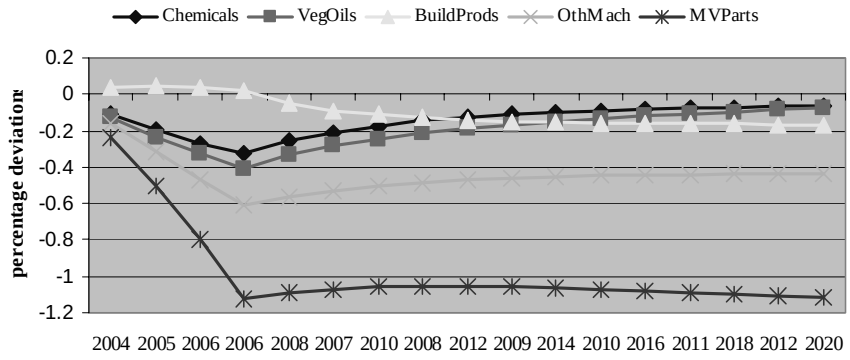
The final industry listed in Figure 5A is Meat products. Its situation pre-FTA is very similar to that of the Sugar industry, with a relatively high USA-export propensity of 5.2 per cent (Table 5). This, combined with an initial rate of protection in the USA market of 4.0 per cent (Table 3), means that removing protections results in a relatively strong stimulus for the Australian industry.

XII. *For some other AUS industries AUS/USA free trade lowers output relative to base in the long run.* There are seven industries for which the FTA reduces output relative to baseline values in the long-run year (Table A2). All but the least affected (Public services and Clothing and footwear) are shown in Figure 6A. Prominent among these is Motor vehicles and parts which is projected to lose 1.12 percent of its baseline output in the long-run year. The AUS motor vehicles industry faces quite strong competition in its local market from USA imports: USA-import penetration is 7.3 per cent (Table 5).

[9] Shown in this table are industries for which output in the long-run rises by more than 0.9 per cent relative to baseline levels.

Relative to the level of USA-import penetration, its USA-export propensity is quite low (2.6 per cent). The relatively high rate of import penetration, combined with an initially high rate of protection in AUS against USA imports (Table 3) means that when the protection is removed the surge in USA imports causes a relatively significant contraction (relative to base) in the output of the local industry.

Figure 6A: Least Favourably Affected Industries - AUS
(percentage output deviations from base)



The remaining industries shown in Figure 6A are Machinery nec, Non-metalic building products, Vegetable oils and fats, and Chemicals nec. Their presence in the list of least-favourably affected industries is somewhat surprising given the low initial rates of protection on these products in both countries. However, USA-import penetration in Australian markets for these products is relatively high (Table 5), and so removal of protection generates enough additional imports (see the second panel of Table A3) to reduce production of all four AUS industries.

XIII. *The free trade agreement has relatively mild, but positive, impacts on the majority of AUS industries.* Table A2 shows that the majority of industries are projected to experience changes in output (relative to baseline values) in the long-run year of between 0 per cent and 0.9 per cent. Industries in this least-affected group typically face little exposure to trade with the USA. Thus, even though, initially, there may be high bilateral rates of protection on the products produced by these industries (e.g., the rates initially applying to Textiles, clothing and footwear in both AUS and the USA), removing this protection has relatively little direct impact. Another common feature of the least-affected industries is that they have weak input/output connections with industries that are most-affected.

The main influences on the least-affected group are the changes in final domestic demand brought by the free trade agreement. As discussed above, the agreement causes real private consumption and real investment in AUS to expand relative to baseline levels and real government consumption to fall (see Table A1). It follows, therefore, that industries with strong connections to household and investment demand, such as Financial services and Dwelling services (see Table 5), will experience output increases relative to the government-oriented industry, Public services.

XIV. *Overall, the long run impacts on primary agricultural industries and agricultural related industries in AUS are positive.* Table A2 shows that in the long run the free trade agreement increases total primary agricultural output in AUS by 0.52 per cent relative to baseline levels. Total output in agricultural related industries increases relative to its baseline level by 0.62 per cent.

XV. *From the AUS's point of view the free trade agreement is trade creating, with little evidence of trade diversion.* An examination of the contributions by region-of-destination to the final deviations in AUS export volumes show that nearly all of the expansions come from increased exports to the USA (export creation), with little or no evidence of export diversion.

4.2.2 Results for States

Table A4 shows percentage deviations in real Gross State Product (GSP). The key inputs to these results (see Section 2.3) are the simulated effects on industry output at the national level (see Table A2) and data on the industrial composition of each State.

The states that gain most from the FTA are Queensland, Western Australia and Tasmania. The states that gain least are Victoria and South Australia. However, it should be noted that all states gain, and that the difference between the increase in real GSP for the state that gains most (Western Australia) and the state that gains least (Victoria) is only 0.09 percentage points. An implication of our regional methodology is that regions with an over-representation of favourably affected "national" industries gain at the expense of regions with an under-representation of such industries. Victoria gains least because it is over-represented in industries least favourably affected by the FTA. Prominent among these is Motor vehicles and parts (see point XII in Section 4.2.1).

The numbers in the body of Table A6 help us to understand the differences between the long-run (2020) deviations in each states' GSP. They decompose the difference between the percentage deviation in each state's GSP and the percentage deviation in real GDP into the contribution attributable to each sector. The contribution of sector i to the deviation for state r is calculated using the following formula:

$$Cont(i,r) = [z(i,Aus) - z(\bullet,Aus)] \times [S(i,r) - S(i,Aus)] + [z(i,r) - z(i,Aus)] \times S(i,r)$$

where: *z(i,Aus)* is the percentage deviation in output of sector i in Australia;

z(•,Aus) is the percentage deviation in Australia wide real GDP;

z(i,r) is the percentage deviation in output of sector i in state r;

S(i,r) is the share of industry i in State r's GSP; and

S(i,Aus) is the share of industry i in Australia's GDP.

As can be seen from this formula, an industry can make a positive contribution to the percentage deviation in a state's GSP relative to that of Australia:

- if it is an industry with a percentage deviation in output exceeding the percentage deviation in real GDP (i.e., if $[z(i,Aus) - z(\bullet,Aus)] > 0$) and is over-represented in the state (i.e., $[S(i,r) - S(i,Aus)] > 0$);
- if it is an industry with a percentage deviation in output less than the percentage deviation in real GDP (i.e., if $[z(i,Aus) - z(\bullet,Aus)] < 0$) and is under-represented in the state $[S(i,r) - S(i,Aus)] < 0$; or
- if its percentage deviation in output in the state exceeds its percentage deviation in output in Australia as a whole (i.e., if $[z(i,r) - z(i,Aus)] > 0$).

Now consider Table A6 for Victoria. The first thing to note is the appearance (as for all states) of positive and negative sectoral contributions. In other words, a combination of strengths and weaknesses explains why Victoria's real GSP rises by less than real GDP in the long-run year. The most obvious weakness is Motor vehicles and parts. This sector is projected to experience a 1.12 per cent decline in output at the national level (and in Victoria), compared to a rise of 0.17 per cent in real GDP, and is over-represented in Victoria. Another weakness for the

Victorian economy is an under-representation of mining, which is expected to expand by more than real GDP. The negative entries for Victoria towards the bottom of the table are for "local" industries. The percentage deviations in output in Victoria for local industries tend to be smaller than at the national level reflecting negative local multiplier effects.

Victoria does have some strengths. Of these, the most notable are raw milk and dairy products, in which Victoria is over-represented and which are projected to expand by more than real GDP. Another area of strength is the Textiles industry (which includes wool scouring).

Table A4 also shows projections for employment by state. The long-run deviations in state employment follow a similar pattern to the long-run deviations in real GSP. For Victoria, employment is projected to fall below its basecase level in 2020 by 0.034 per cent. This is equivalent to a loss of around 800 full and part-time jobs (see Table A5). By contrast, employment in Queensland is elevated by 0.042 per cent, or 800 full and part-time jobs.

Note on employment

In our model, employment is measured in terms of hours worked, not persons employed. Accordingly, percentage changes in employment, as simulated by the model, represent percentage changes in hours worked. To derive estimates of changes in the number of persons employed, we make a calculation outside of the model in which we assume that the exogenous shocks do not affect the ratio of hours employed to persons employed in each industry. Under this assumption, in each industry the percentage increase in persons employed equals the percentage increase in hours worked. Our simulations suggest that the FTA will reduce aggregate employment (hours) in Victoria in 2020 by around 0.034. In our basecase, Victorian employment in 2020 is around 2.6 million persons. Applying the percentage change to the baseline number yields a fall of about 800 in the number of full and part-time jobs.

We qualify this estimate, however, by noting that the translation from hours to persons probably overestimates the likely change in persons employed. This is because a reduction in employment (persons) is likely to arise from a mix of reduced hours worked per person and reduced employment (persons). This needs to be kept in mind when interpreting our results.

4.2.3 Results for Victorian Sub-state Regions

Table A4 also shows percentage deviations in aggregate real value added and employment for the eleven Victorian sub-state regions identified in the model. The key inputs to these results are the simulated effects on industry output at the state level (see the first column of numbers in Table A7) and data on the industrial composition of each sub-state region. In the long-run year, the regions that gain most from the FTA are the Western District (real GRP up 0.47 per cent *c.f.* an increase in Victoria's real GSP of 0.13 per cent), Wimmera (real GRP up 0.39 per cent), Goulbourn (real GRP up 0.38 per cent) and the Mallee (real GRP up 0.37 per cent). All regions are projected to experience increased real GSP as a result of the FTA, but Melbourne and Barwon are expected to expand least. In terms of employment, the FTA results in net job loss in Melbourne, Barwon and Central Highlands.

The numbers in the body of Table A7 help us to understand the relative results for regional GRP in the same way as the numbers in Table A6 allowed us to understand the relative results for state GSP. Let us first consider the region which is projected to increase most, Western District (D3). Its strength is clearly in the area of milk and dairy production. Both industries are expected to increase their share of GSP and are over-represented in the region.

Another strength of the region is motor-vehicles and parts, which is expected to experience a decline in its GSP share, but which is under-represented in the region. Other strengths are in the services industries that benefit from positive local multiplier effects.

Now consider the regions that do least well: Melbourne (D1) and Barwon (D2). The main weakness of Melbourne is an under-representation of milk and dairy and an over-representation of Public services, which experiences a small reduction in output. The major weakness of Barwon is an over-representation of adversely affected Motor vehicles and parts. However, this is partly offset by an over-representation of Textiles (including wool scouring), which is projected to expand its share of GSP.

References

Adams, P.D. (2003), "Interpretation of Macroeconomic Results from a CGE Model such as GTAP", *mimeo*, paper prepared for the 2003 GTAP conference in Amsterdam.

Adams, P.D. and P.B. Dixon (1995) "Prospects for Australian Industries, States and Regions: 1993-94 to 2001-02", *Australian Bulletin of Labour*, 21(2), pp. 87-108.

Armington, P.S. (1969), "The Geographic Pattern of Trade and the Effects of Price Changes", *IMF Staff Papers*, XVI, pp. 176-199.

Dixon, P.B. and M. Rimmer (2002) *Dynamic General Equilibrium Modelling for Forecasting and Policy: A Practical Guide and Documentation of MONASH*, North-Holland, Amsterdam.

Dixon, P.B., B.R. Parmenter, J. Sutton, and D.P. Vincent (1982) *ORANI: A Multisectoral Model of the Australian Economy*, North-Holland, Amsterdam.

Francois, J. (1999) " A Gravity Approach to Measuring Services Protection", unpublished manuscript, Erasmus University, Rotterdam.

Hertel, T.W. (ed.) (1996) *Global Trade Analysis: Modelling and Applications*, Cambridge University Press, New York and Cambridge.

Hertel, T.W., T. Walmsley and K, Itakura (2001), *Journal of Economic Integration*, 16(4), December, pp. 446-84.

Harrison, W.J., J.M. Horridge and K.R. Pearson (2000), 'Decomposing Simulation Results with respect to Exogenous Shocks', *Computational Economics*, 15:227-249, Kluwer, Netherlands.

Ianchovichina, E., and McDougall, R.A., (2000) "Theoretical Structure of Dynamic GTAP", GTAP Technical Paper no. 17, Centre for Global Trade Analysis, Purdue University.

McDougall, R.A. and Dimaranan, B.V. (2001) "Global Trade, Assistance, and Protection: The GTAP 5 Data Base", *mimeo*, Centre for Global Trade Analysis, Purdue University.

Walmsley, T.L., Dimaranan, B.V., and McDougall, R.A., (2000) "A Base Case Scenario for the Dynamic GTAP model", *mimeo*, Centre for Global Trade Analysis, Purdue University.

Table 1: Regional Aggregation of GTAP Used for this Report

	Identifier	Countries in Region
1.	AUS	Australia
2.	NZL	New Zealand
3.	CHN	China, mainland and Hong Kong
4	JPN	Japan
4.	KOR	Korea
5.	TWN	Taiwan
6.	ASEAN6	Indonesia, Malaysia, Philippines, Singapore, Thailand, Vietnam
7.	USA	USA
8.	CAN/MEX	Canada and Mexico
9.	EU	European Union countries
10.	ROW	*Rest of the World* (rest of South and Central America, Africa, rest of Asia, rest of Europe, rest of Oceania

Table 2: Sectoral Aggregation of GTAP Used for this Report

Identifier	Sectors in Region
Wheat	Wheat
OthGrain	Other grains
Crops	Crops excluding grains
Animal	Animal products
Milk	Raw milk
Wool	Wool
Forestry	Forestry
Fishing	Fishing
Mining	Mining
Meat	Meat products
VegOils	Vegetable oils and fats
DairyProds	Dairy products
Sugar	Sugar products
Foodnec	Food products nec
Drinks	Beverages and tobacco products
Textiles	Textiles, textile products and wool scouring
TCFnec	Clothing and footwear
Wood	Wood products
Paper	Paper products
Petrol	Petroleum products
Chemicals	Chemicals nec
BuildProds	Non-metalic building products
Metals	Basic metals
MetalProds	Metal products
MVParts	Motor vehicles and parts
OthTrEquip	Transport equipment nec
ElecEquip	Electronic equipment
OthMach	Machinery nec
Utilities	Electricity, water, gas services
Mannec	Manufacturing nec
Construction	Construction services
Trade	Trade services
Transport	Transport services
Comm	Communication services
Financial	Financial services
OtherBus	Business services
OtherPrivSer	Private services nec
OtherPubSer	Public services
Dwellings	Dwelling services

Table 3: Percentage Bilateral Ad Valorem Rates of Protection against Imports, 1997 and 2004

Product		AUS to USA		USA to AUS	
		1997	2004	1997	2004
Wheat	Wheat	2.5	2.5	0.0	0.0
OthGrain	Other grains	0.6	0.4	0.8	0.1
Crops	Crops excluding grains	9.5	9.5	2.1	2.1
Animal	Animal products	0.6	0.3	0.7	0.0
Milk	Raw milk	-0.1	-0.1	0.0	0.0
Wool	Wool	0.9	0.9	-18.0	-13.9
Forestry	Forestry	3.3	0.1	0.2	0.0
Fishing	Fishing	1.0	0.1	0.5	0.0
Mining	Mining	0.3	0.3	0.1	0.1
Meat	Meat products	5.2	4.0	3.2	0.5
VegOils	Vegetable oils and fats	4.3	2.0	2.8	2.8
DairyProds	Dairy products	42.5	42.5	7.3	7.0
Sugar	Sugar products	53.4	6.3	13.9	3.8
Foodnec	Food products nec	11.4	2.2	5.6	3.4
Drinks	Beverages and tobacco products	3.0	1.1	9.2	3.7
Textiles	Textiles, textile products and wool scouring	9.5	8.0	12.6	10.3
TCFnec	Clothing and footwear	7.9	6.4	19.2	16.8
Wood	Wood products	1.6	1.0	4.6	3.6
Paper	Paper products	0.4	0.4	2.9	2.9
Petrol	Petroleum products	2.4	0.6	0.0	0.0
Chemicals	Chemicals nec	3.2	1.0	3.4	3.4
BuildProds	Non-metalic building products	3.3	3.3	5.1	5.1
Metals	Basic metals	0.7	0.2	3.1	3.0
MetalProds	Meltal products	3.2	1.8	6.4	6.4
MVParts	Motor vehicles and parts	2.2	0.9	8.5	4.9
OthTrEquip	Transport equipment nec	0.6	0.6	0.4	0.4
ElecEquip	Electronic equipment	2.3	1.2	0.9	0.9
OthMach	Machinery nec	2.6	1.2	3.9	3.9
Utilities	Electricity, water, gas services	0.0	0.0	0.0	0.0
Mannec	Manufacturing nec	1.5	0.9	3.7	3.7
Construction	Construction services	0.0	0.0	0.0	0.0
Trade	Trade services	0.0	0.0	0.5	0.0
Transport	Transport services	0.0	0.0	0.0	0.0
Comm	Communication services	0.0	0.0	0.0	0.0
Financial	Financial services	0.0	0.0	0.0	0.0
OtherBus	Business services	0.0	0.0	0.0	0.0
OtherPrivSer	Private services nec	0.0	0.0	0.4	0.0
OtherPubSer	Public services	0.0	0.0	0.0	0.0
Dwellings	Dwelling services	0.0	0.0	0.0	0.0

Table 4: Value ($US m) of Bilateral Trade at World Prices, 1997 and 2004

Product		AUS to USA		USA to AUS	
		1997	2004	1997	2004
Wheat	Wheat	0.0	0.0	0.2	0.2
OthGrain	Other grains	0.1	0.2	0.9	1.2
Crops	Crops excluding grains	57.4	62.3	86.5	112.2
Animal	Animal products	19.4	19.2	18.7	26.8
Milk	Raw milk	0.0	0.0	0.0	0.0
Wool	Wool	83.2	86.2	0.0	0.0
Forestry	Forestry	0.5	0.6	2.2	3.0
Fishing	Fishing	6.7	7.5	0.4	0.5
Mining	Mining	425.8	493.3	15.1	19.5
Meat	Meat products	457.3	457.0	6.5	8.6
VegOils	Vegetable oils and fats	1.1	1.2	47.2	50.5
DairyProds	Dairy products	40.3	39.8	3.6	4.5
Sugar	Sugar products	77.0	147.6	0.4	0.6
Foodnec	Food products nec	98.0	114.4	161.1	194.3
Drinks	Beverages and tobacco products	134.7	132.2	62.6	104.1
Textiles	Textiles, textile products and wool scouring	154.9	156.4	159.2	195.1
TCFnec	Clothing and footwear	70.5	58.9	58.9	82.7
Wood	Wood products	32.8	30.9	86.4	123.2
Paper	Paper products	48.0	49.9	455.7	567.0
Petrol	Petroleum products	9.7	11.4	16.7	20.3
Chemicals	Chemicals nec	285.0	320.2	2111.1	2581.4
BuildProds	Non-metalic building products	35.8	34.5	318.2	406.2
Metals	Basic metals	911.8	986.5	146.1	178.9
MetalProds	Meltal products	31.6	32.5	165.6	215.0
MVParts	Motor vehicles and parts	404.9	457.6	849.1	1641.9
OthTrEquip	Transport equipment nec	194.1	175.1	951.0	1304.4
ElecEquip	Electronic equipment	119.9	130.3	1750.8	2150.2
OthMach	Machinery nec	414.4	423.5	3689.6	4813.6
Utilities	Electricity, water, gas services	5.1	5.6	4.2	5.1
Mannec	Manufacturing nec	79.0	73.3	210.5	251.2
Construction	Construction services	3.0	3.2	2.9	3.6
Trade	Trade services	310.6	303.2	176.1	216.1
Transport	Transport services	1772.9	1944.0	1499.4	1833.8
Comm	Communication services	384.8	404.3	244.8	299.6
Financial	Financial services	243.9	262.7	239.7	291.0
OtherBus	Business services	180.8	167.5	286.8	363.3
OtherPrivSer	Private services nec	224.2	217.8	275.6	348.5
OtherPubSer	Public services	501.2	475.1	574.4	755.7
Dwellings	Dwelling services	0.0	0.0	0.0	0.0
	Total	7820.7	8286.0	14678.2	19174.1

Table 5: Commodity Sales Characteristics in 2004

		Percentage shares in total sales of sales to:							Percentage shares in local market of imports from:		
		Industries	Household	Investment	Gov.	Export-USA	Export-other	Total	USA	Other regions	All regions
	AUS										
Wheat	Wheat	20.9	0.0	0.0	0.0	0.0	79.1	100.0	0.0	0.3	0.4
OthGrain	Other grains	72.4	7.3	0.0	0.0	0.0	20.3	100.0	0.1	0.3	0.4
Crops	Crops excluding grains	53.9	19.0	0.0	1.1	0.6	25.4	100.0	1.5	5.4	6.8
Animal	Animal products	73.3	5.1	0.0	0.0	0.3	21.3	100.0	0.4	1.7	2.1
Milk	Raw milk	99.9	0.1	0.0	0.0	0.0	0.0	100.0	0.0	0.1	0.1
Wool	Wool	25.3	0.0	0.0	0.0	2.9	71.8	100.0	0.0	0.8	0.8
Forestry	Forestry	75.7	1.4	2.3	17.4	0.0	3.2	100.0	0.2	1.3	1.5
Fishing	Fishing	31.8	44.6	0.0	3.2	0.3	20.1	100.0	0.0	2.2	2.2
Mining	Mining	50.9	0.2	0.3	0.3	1.5	47.0	100.0	0.1	15.9	16.0
Meat	Meat products	21.6	43.0	0.0	0.0	5.2	30.2	100.0	0.1	1.1	1.3
VegOils	Vegetable oils and fats	35.7	48.2	0.0	0.0	0.2	15.9	100.0	6.4	26.2	32.6
DairyProds	Dairy products	33.5	38.6	0.0	0.0	0.6	27.3	100.0	0.1	3.2	3.3
Sugar	Sugar products	38.5	11.9	0.0	0.0	8.4	41.2	100.0	0.1	0.6	0.7
Foodnec	Food products nec	22.5	63.6	0.0	0.0	0.8	13.0	100.0	1.5	9.7	11.2
Drinks	Beverages and tobacco products	3.9	88.4	0.0	0.0	1.0	6.8	100.0	0.8	2.9	3.7
Textiles	Textiles, tex prods. & wool scouring	49.9	22.5	1.3	0.0	2.4	23.8	100.0	2.7	30.3	33.0
TCFnec	Clothing and footwear	13.2	73.7	0.0	0.0	1.2	11.9	100.0	1.2	35.4	36.6
Wood	Wood products	53.9	22.1	17.6	0.0	0.3	6.1	100.0	1.1	10.9	11.9
Paper	Paper products	78.8	16.3	0.4	0.4	0.3	3.9	100.0	2.8	8.9	11.7
Petrol	Petroleum products	48.1	46.5	0.0	0.0	0.1	5.3	100.0	0.1	4.9	5.0
Chemicals	Chemicals nec	68.5	17.5	0.1	0.0	1.4	12.6	100.0	8.8	22.8	31.6
BuildProds	Non-metalic building products	92.6	1.5	0.0	0.0	0.4	5.5	100.0	3.9	10.6	14.5
Metals	Basic metals	56.2	0.2	0.0	0.0	3.8	39.7	100.0	1.0	13.9	15.0
MetalProds	Meltal products	84.2	3.2	8.0	0.0	0.2	4.4	100.0	1.4	9.2	10.5
MVParts	Motor vehicles and parts	26.4	11.8	50.8	0.0	2.6	8.4	100.0	7.3	24.1	31.4
OthTrEquip	Transport equipment nec	43.1	2.9	31.5	0.0	3.2	19.3	100.0	20.6	13.3	33.9
ElecEquip	Electronic equipment	36.8	8.9	16.5	0.0	3.1	34.7	100.0	18.1	59.6	77.7
OthMach	Machinery nec	37.4	10.7	27.6	0.0	2.5	21.7	100.0	16.5	40.3	56.7
Utilities	Electricity, water, gas services	79.5	19.3	0.0	0.9	0.0	0.3	100.0	0.0	0.1	0.1
Mannec	Manufacturing nec	33.3	28.5	0.4	0.0	3.3	34.4	100.0	8.1	47.5	55.6
Construction	Construction services	5.4	0.0	91.6	2.8	0.0	0.1	100.0	0.0	0.1	0.1
Trade	Trade services	30.2	60.2	7.6	0.0	0.3	1.8	100.0	0.2	1.5	1.7
Transport	Transport services	47.6	22.4	2.0	9.3	4.9	13.8	100.0	4.7	13.2	17.9
Comm	Communication services	64.5	29.3	0.0	0.1	2.2	3.8	100.0	1.7	4.1	5.8
Financial	Financial services	67.4	28.4	0.0	0.4	0.6	3.2	100.0	0.7	2.7	3.3
OtherBus	Business services	84.8	4.9	5.3	2.4	0.2	2.4	100.0	0.5	3.7	4.2
OtherPrivSer	Private services nec	23.7	49.9	0.1	21.1	0.7	4.6	100.0	1.1	3.5	4.6
OtherPubSer	Public services	9.0	27.6	0.2	61.3	0.4	1.5	100.0	0.7	0.7	1.4
Dwellings	Dwelling services	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0

Table 5 (continued): Commodity Sales Characteristics in 2004

		Percentage shares in total sales of sales to:							Percentage shares in local market of imports from:		
		Industries	Household	Investment	Gov.	Export-AUS	Export-other	Total	AUS	Other regions	All regions
	USA										
Wheat	Wheat	52.1	0.2	0.0	0.1	0.0	47.7	100.0	0.0	6.2	6.2
OthGrain	Other grains	80.7	0.9	0.0	0.0	0.0	18.3	100.0	0.0	1.5	1.5
Crops	Crops excluding grains	48.9	24.0	0.0	1.0	0.1	25.9	100.0	0.1	14.5	14.6
Animal	Animal products	89.3	5.1	0.0	0.3	0.0	5.3	100.0	0.0	2.8	2.8
Milk	Raw milk	99.6	0.4	0.0	0.0	0.0	0.0	100.0	0.0	0.1	0.1
Wool	Wool	97.1	0.2	0.0	0.0	0.0	2.7	100.0	18.9	8.7	27.6
Forestry	Forestry	66.1	17.8	0.0	0.2	0.0	16.0	100.0	0.0	2.6	2.6
Fishing	Fishing	50.5	8.3	0.0	0.3	0.0	40.9	100.0	0.3	56.4	56.7
Mining	Mining	93.8	0.1	0.1	0.0	0.0	6.1	100.0	0.2	37.0	37.2
Meat	Meat products	37.4	52.5	0.0	1.9	0.0	8.2	100.0	0.4	2.2	2.6
VegOils	Vegetable oils and fats	70.2	2.4	0.0	0.0	0.3	27.1	100.0	0.0	14.0	14.1
DairyProds	Dairy products	43.5	49.4	0.0	5.6	0.0	1.5	100.0	0.1	1.6	1.7
Sugar	Sugar products	71.5	24.7	0.0	1.8	0.0	2.0	100.0	1.7	21.9	23.6
Foodnec	Food products nec	34.4	56.0	0.0	1.8	0.1	7.8	100.0	0.0	6.8	6.9
Drinks	Beverages and tobacco products	22.9	65.9	0.0	0.2	0.1	10.9	100.0	0.1	5.0	5.1
Textiles	Textiles, tex prods. & wool scouring	64.9	20.2	2.7	0.9	0.2	11.1	100.0	0.1	17.3	17.4
TCFnec	Clothing and footwear	15.4	73.1	0.0	1.2	0.1	10.2	100.0	0.0	39.4	39.5
Wood	Wood products	59.2	16.9	16.2	1.6	0.1	6.1	100.0	0.0	12.1	12.2
Paper	Paper products	70.9	17.9	0.0	4.1	0.2	7.0	100.0	0.0	5.7	5.7
Petrol	Petroleum products	67.6	28.2	0.0	0.0	0.0	4.2	100.0	0.0	4.8	4.8
Chemicals	Chemicals nec	62.2	18.7	0.5	2.8	0.4	15.5	100.0	0.1	11.8	11.9
BuildProds	Non-metalic building products	79.5	5.1	0.0	0.8	0.4	14.2	100.0	0.0	13.4	13.5
Metals	Basic metals	88.4	0.1	0.0	0.2	0.1	11.2	100.0	0.4	16.5	16.9
MetalProds	Meltal products	84.6	3.6	3.5	1.3	0.1	6.9	100.0	0.0	7.2	7.2
MVParts	Motor vehicles and parts	23.2	27.6	27.9	2.0	0.4	18.9	100.0	0.1	25.2	25.3
OthTrEquip	Transport equipment nec	20.9	13.5	12.3	20.3	0.7	32.3	100.0	0.1	12.7	12.9
ElecEquip	Electronic equipment	29.9	7.4	18.6	2.6	0.6	40.8	100.0	0.0	45.3	45.4
OthMach	Machinery nec	33.0	9.6	20.7	7.4	0.7	28.6	100.0	0.1	23.7	23.8
Utilities	Electricity, water, gas services	72.2	26.7	0.0	0.8	0.0	0.2	100.0	0.0	0.7	0.7
Mannec	Manufacturing nec	18.0	44.6	7.7	2.6	0.5	26.6	100.0	0.1	50.6	50.7
Construction	Construction services	23.4	0.0	58.0	18.1	0.0	0.5	100.0	0.0	0.1	0.1
Trade	Trade services	33.4	59.1	5.5	1.4	0.0	0.6	100.0	0.0	0.8	0.8
Transport	Transport services	57.5	22.1	2.0	3.9	0.3	14.1	100.0	0.3	11.2	11.5
Comm	Communication services	45.7	45.4	2.6	4.2	0.1	2.1	100.0	0.1	2.8	2.9
Financial	Financial services	50.9	43.5	2.1	2.0	0.0	1.4	100.0	0.0	1.0	1.0
OtherBus	Business services	72.2	16.4	3.2	5.1	0.0	3.2	100.0	0.0	2.0	2.1
OtherPrivSer	Private services nec	21.9	73.6	0.0	1.7	0.1	2.7	100.0	0.0	1.3	1.4
OtherPubSer	Public services	10.4	53.5	0.0	33.7	0.0	2.4	100.0	0.0	0.9	0.9
Dwellings	Dwelling services	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0

Table A1: Macroeconomic Variables – AUS and USA (percentage deviations from baseline values)

Variable	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2020
AUS													
Real private consumption	0.038	0.069	0.096	0.119	0.106	0.101	0.098	0.097	0.096	0.095	0.094	0.093	0.087
Real investment	0.331	0.596	0.823	1.030	0.826	0.697	0.614	0.556	0.516	0.487	0.466	0.450	0.413
Real government consumption	0.024	0.033	0.033	0.026	-0.001	-0.015	-0.023	-0.028	-0.031	-0.034	-0.036	-0.038	-0.045
Export volume	0.020	0.132	0.313	0.553	0.769	0.914	1.014	1.086	1.140	1.180	1.210	1.233	1.286
Import volume	0.380	0.746	1.117	1.504	1.393	1.324	1.280	1.250	1.229	1.214	1.203	1.194	1.168
Real GDP	0.031	0.063	0.098	0.135	0.138	0.144	0.149	0.154	0.158	0.161	0.164	0.166	0.170
Employment	0.036	0.058	0.072	0.082	0.047	0.028	0.017	0.011	0.008	0.005	0.004	0.003	0.001
Capital	0.027	0.073	0.134	0.206	0.257	0.293	0.319	0.338	0.352	0.363	0.372	0.378	0.394
Terms of trade	0.027	0.035	0.031	0.016	-0.033	-0.066	-0.089	-0.106	-0.119	-0.129	-0.137	-0.143	-0.165
USA													
Real private consumption	0.003	0.005	0.008	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.011	0.011	0.011
Real investment	0.015	0.025	0.034	0.042	0.030	0.023	0.020	0.018	0.016	0.015	0.014	0.014	0.013
Real government consumption	0.003	0.005	0.007	0.009	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008
Export volume	0.011	0.027	0.044	0.064	0.070	0.072	0.072	0.072	0.071	0.071	0.070	0.069	0.064
Import volume	0.035	0.069	0.104	0.142	0.136	0.133	0.131	0.131	0.130	0.130	0.130	0.130	0.130
Real GDP	0.002	0.003	0.004	0.005	0.005	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
Employment	0.002	0.003	0.004	0.004	0.002	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000
Capital	0.001	0.003	0.005	0.007	0.009	0.010	0.010	0.011	0.011	0.011	0.012	0.012	0.012
Terms of trade	0.012	0.025	0.037	0.050	0.048	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047

Table A2: Industry Output – AUS and USA (percentage deviations from baseline values)

	Variable	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2020
	AUS													
Wheat	Wheat	-0.136	-0.232	-0.299	-0.345	-0.219	-0.130	-0.063	-0.012	0.029	0.062	0.091	0.115	0.201
OthGrain	Other grains	-0.021	-0.020	-0.004	0.024	0.083	0.123	0.151	0.171	0.186	0.197	0.205	0.211	0.225
Crops	Crops excluding grains	0.035	0.105	0.204	0.328	0.404	0.456	0.493	0.520	0.539	0.554	0.565	0.573	0.590
Animal	Animal products	0.045	0.119	0.212	0.318	0.400	0.455	0.494	0.521	0.540	0.553	0.563	0.570	0.578
Milk	Raw milk	0.211	0.552	1.051	1.750	1.821	1.867	1.896	1.915	1.927	1.934	1.937	1.937	1.913
Wool	Wool	0.105	0.233	0.375	0.524	0.584	0.621	0.643	0.656	0.662	0.664	0.663	0.659	0.622
Forestry	Forestry	0.042	0.079	0.116	0.153	0.140	0.136	0.135	0.136	0.138	0.140	0.142	0.144	0.151
Fishing	Fishing	-0.009	-0.004	0.011	0.034	0.073	0.102	0.124	0.141	0.154	0.165	0.175	0.183	0.212
Mining	Mining	-0.092	-0.135	-0.142	-0.122	0.016	0.111	0.180	0.231	0.271	0.302	0.328	0.349	0.417
Meat	Meat products	0.156	0.338	0.539	0.756	0.817	0.858	0.886	0.906	0.919	0.928	0.934	0.938	0.937
VegOils	Vegetable oils and fats	-0.129	-0.236	-0.327	-0.407	-0.335	-0.283	-0.244	-0.213	-0.189	-0.168	-0.150	-0.135	-0.077
DairyProds	Dairy products	0.213	0.556	1.060	1.765	1.838	1.884	1.914	1.934	1.946	1.953	1.956	1.956	1.933
Sugar	Sugar products	0.439	0.936	1.483	2.073	2.167	2.227	2.264	2.287	2.300	2.305	2.304	2.299	2.235
Foodnec	Food products nec	-0.033	-0.047	-0.047	-0.034	0.019	0.055	0.082	0.102	0.118	0.131	0.141	0.149	0.177
Drinks	Beverages and tobacco products	0.061	0.137	0.223	0.316	0.355	0.379	0.394	0.402	0.406	0.406	0.404	0.400	0.365
Textiles	Textiles, tex prods. & wool scouring	0.100	0.237	0.400	0.577	0.670	0.730	0.770	0.797	0.815	0.826	0.832	0.835	0.821
TCFnec	Clothing and footwear	0.008	0.011	-0.013	-0.090	-0.021	0.021	0.045	0.057	0.061	0.060	0.055	0.047	-0.011
Wood	Wood products	0.101	0.182	0.254	0.321	0.263	0.229	0.209	0.197	0.189	0.184	0.180	0.178	0.175
Paper	Paper products	-0.007	-0.011	-0.013	-0.012	0.002	0.015	0.025	0.033	0.040	0.044	0.048	0.051	0.056
Petrol	Petroleum products	0.045	0.111	0.202	0.324	0.347	0.365	0.378	0.389	0.396	0.402	0.406	0.409	0.413
Chemicals	Chemicals nec	-0.109	-0.197	-0.268	-0.327	-0.259	-0.210	-0.174	-0.148	-0.127	-0.112	-0.100	-0.090	-0.063
BuildProds	Non-metalic building products	0.036	0.045	0.038	0.021	-0.047	-0.088	-0.113	-0.130	-0.141	-0.149	-0.154	-0.158	-0.166
Metals	Basic metals	-0.175	-0.286	-0.352	-0.385	-0.192	-0.058	0.040	0.115	0.173	0.219	0.257	0.289	0.396
MetalProds	Meltal products	0.022	0.033	0.040	0.045	0.024	0.014	0.011	0.010	0.010	0.011	0.013	0.014	0.022
MVParts	Motor vehicles and parts	-0.240	-0.504	-0.796	-1.119	-1.087	-1.067	-1.056	-1.051	-1.051	-1.054	-1.060	-1.067	-1.116
OthTrEquip	Transport equipment nec	-0.003	0.034	0.104	0.204	0.304	0.381	0.440	0.488	0.526	0.559	0.586	0.609	0.691
ElecEquip	Electronic equipment	0.167	0.379	0.629	0.911	1.014	1.087	1.140	1.179	1.210	1.233	1.252	1.267	1.308
OthMach	Machinery nec	-0.164	-0.319	-0.467	-0.610	-0.563	-0.529	-0.503	-0.485	-0.471	-0.461	-0.453	-0.448	-0.436
Utilities	Electricity, water, gas services	-0.010	-0.009	0.002	0.021	0.060	0.089	0.111	0.128	0.142	0.152	0.160	0.167	0.186
Mannec	Manufacturing nec	0.065	0.183	0.340	0.529	0.651	0.730	0.782	0.816	0.837	0.850	0.857	0.859	0.835
Construction	Construction services	0.305	0.549	0.760	0.953	0.767	0.651	0.575	0.523	0.486	0.460	0.441	0.427	0.395
Trade	Trade services	0.055	0.104	0.149	0.192	0.175	0.167	0.163	0.161	0.160	0.159	0.158	0.157	0.152
Transport	Transport services	-0.016	-0.015	-0.001	0.025	0.075	0.111	0.139	0.161	0.178	0.191	0.202	0.211	0.238
Comm	Communication services	0.009	0.024	0.045	0.070	0.091	0.109	0.123	0.135	0.144	0.151	0.156	0.161	0.172
Financial	Financial services	0.000	0.006	0.015	0.028	0.047	0.063	0.076	0.086	0.095	0.101	0.106	0.110	0.122
OtherBus	Business services	0.046	0.090	0.134	0.179	0.172	0.171	0.173	0.176	0.178	0.181	0.183	0.185	0.192
OtherPrivSer	Private services nec	0.080	0.159	0.238	0.319	0.309	0.304	0.301	0.297	0.294	0.290	0.285	0.281	0.255
OtherPubSer	Public services	0.018	0.023	0.020	0.011	-0.012	-0.023	-0.029	-0.033	-0.035	-0.036	-0.037	-0.038	-0.043
Dwellings	Dwelling services	0.020	0.043	0.068	0.095	0.111	0.123	0.133	0.140	0.145	0.148	0.150	0.152	0.150
	Primary agriculture	0.022	0.076	0.154	0.251	0.331	0.386	0.424	0.452	0.472	0.487	0.498	0.506	0.522
	Agricultural-related	0.059	0.155	0.288	0.462	0.516	0.552	0.577	0.594	0.606	0.614	0.619	0.622	0.620
	All and related agriculture	0.038	0.109	0.209	0.337	0.406	0.454	0.487	0.510	0.527	0.540	0.549	0.555	0.566
	All other industries	0.031	0.061	0.091	0.123	0.123	0.127	0.131	0.135	0.138	0.141	0.143	0.145	0.150
	All industries	0.031	0.063	0.098	0.135	0.138	0.144	0.149	0.154	0.158	0.161	0.164	0.166	0.170

Table A2 (continued): Industry Output – AUS and USA (percentage deviations from baseline values)

	Variable	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2020
	USA													
Wheat	Wheat	-0.006	-0.013	-0.023	-0.035	-0.040	-0.044	-0.047	-0.050	-0.052	-0.055	-0.056	-0.058	-0.065
OthGrain	Other grains	-0.013	-0.027	-0.042	-0.059	-0.059	-0.059	-0.059	-0.059	-0.059	-0.059	-0.059	-0.059	-0.061
Crops	Crops excluding grains	-0.012	-0.024	-0.036	-0.049	-0.047	-0.047	-0.047	-0.047	-0.047	-0.047	-0.047	-0.048	-0.050
Animal	Animal products	-0.012	-0.024	-0.037	-0.050	-0.050	-0.051	-0.051	-0.052	-0.052	-0.053	-0.053	-0.054	-0.057
Milk	Raw milk	-0.019	-0.043	-0.074	-0.112	-0.112	-0.112	-0.112	-0.112	-0.111	-0.111	-0.111	-0.110	-0.109
Wool	Wool	-0.889	-1.796	-2.720	-3.659	-3.655	-3.644	-3.630	-3.613	-3.595	-3.575	-3.554	-3.532	-3.416
Forestry	Forestry	-0.005	-0.010	-0.016	-0.021	-0.021	-0.021	-0.021	-0.021	-0.021	-0.022	-0.022	-0.022	-0.024
Fishing	Fishing	-0.017	-0.034	-0.051	-0.069	-0.067	-0.066	-0.066	-0.066	-0.066	-0.066	-0.067	-0.067	-0.069
Mining	Mining	-0.008	-0.016	-0.025	-0.035	-0.034	-0.034	-0.035	-0.035	-0.036	-0.036	-0.036	-0.037	-0.039
Meat	Meat products	-0.011	-0.023	-0.035	-0.047	-0.048	-0.048	-0.048	-0.048	-0.048	-0.049	-0.049	-0.049	-0.049
VegOils	Vegetable oils and fats	-0.007	-0.013	-0.020	-0.027	-0.025	-0.024	-0.024	-0.024	-0.024	-0.025	-0.025	-0.025	-0.028
DairyProds	Dairy products	-0.020	-0.046	-0.078	-0.119	-0.119	-0.119	-0.119	-0.118	-0.118	-0.118	-0.117	-0.117	-0.115
Sugar	Sugar products	-0.073	-0.151	-0.233	-0.319	-0.321	-0.323	-0.324	-0.325	-0.326	-0.327	-0.328	-0.329	-0.332
Foodnec	Food products nec	-0.003	-0.006	-0.009	-0.013	-0.012	-0.012	-0.012	-0.012	-0.012	-0.012	-0.012	-0.012	-0.013
Drinks	Beverages and tobacco products	-0.006	-0.011	-0.015	-0.020	-0.018	-0.017	-0.016	-0.016	-0.015	-0.015	-0.015	-0.015	-0.014
Textiles	Textiles, tex prods. & wool scouring	0.012	0.028	0.050	0.078	0.081	0.083	0.085	0.086	0.088	0.089	0.091	0.092	0.098
TCFnec	Clothing and footwear	0.007	0.025	0.057	0.108	0.114	0.118	0.122	0.124	0.127	0.130	0.132	0.134	0.144
Wood	Wood products	0.003	0.005	0.007	0.008	0.005	0.003	0.003	0.002	0.002	0.002	0.003	0.003	0.004
Paper	Paper products	0.002	0.004	0.005	0.007	0.007	0.008	0.008	0.008	0.009	0.009	0.009	0.009	0.009
Petrol	Petroleum products	0.000	-0.001	-0.002	-0.004	-0.004	-0.004	-0.004	-0.004	-0.004	-0.004	-0.004	-0.004	-0.005
Chemicals	Chemicals nec	0.007	0.014	0.022	0.031	0.032	0.033	0.034	0.034	0.035	0.035	0.035	0.035	0.036
BuildProds	Non-metalic building products	0.017	0.034	0.053	0.074	0.074	0.075	0.076	0.077	0.078	0.079	0.080	0.081	0.087
Metals	Basic metals	0.001	0.003	0.005	0.006	0.006	0.006	0.005	0.005	0.005	0.004	0.004	0.004	0.003
MetalProds	Meltal products	0.009	0.019	0.030	0.042	0.042	0.042	0.042	0.043	0.043	0.044	0.045	0.045	0.049
MVParts	Motor vehicles and parts	0.030	0.064	0.104	0.150	0.153	0.156	0.160	0.163	0.167	0.171	0.175	0.179	0.198
OthTrEquip	Transport equipment nec	-0.025	-0.052	-0.081	-0.113	-0.113	-0.114	-0.116	-0.118	-0.120	-0.122	-0.124	-0.126	-0.136
ElecEquip	Electronic equipment	-0.019	-0.038	-0.058	-0.079	-0.077	-0.076	-0.076	-0.077	-0.078	-0.079	-0.080	-0.081	-0.087
OthMach	Machinery nec	0.014	0.028	0.043	0.059	0.060	0.060	0.061	0.061	0.062	0.062	0.063	0.063	0.065
Utilities	Electricity, water, gas services	0.000	0.001	0.001	0.002	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.003
Mannec	Manufacturing nec	-0.003	-0.005	-0.006	-0.007	-0.004	-0.002	-0.001	0.000	0.000	0.000	0.000	0.000	-0.002
Construction	Construction services	0.009	0.015	0.020	0.025	0.017	0.014	0.012	0.010	0.010	0.009	0.009	0.008	0.007
Trade	Trade services	0.003	0.005	0.007	0.009	0.008	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.008
Transport	Transport services	-0.005	-0.011	-0.017	-0.024	-0.024	-0.025	-0.025	-0.025	-0.026	-0.026	-0.026	-0.027	-0.029
Comm	Communication services	0.001	0.001	0.002	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Financial	Financial services	0.001	0.002	0.003	0.004	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
OtherBus	Business services	0.000	0.000	-0.001	-0.001	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002
OtherPrivSer	Private services nec	0.000	0.000	0.000	0.000	-0.001	-0.001	-0.001	0.000	0.000	0.000	0.000	0.000	0.000
OtherPubSer	Public services	0.000	0.000	0.000	-0.001	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002
Dwellings	Dwelling services	0.001	0.003	0.005	0.007	0.008	0.009	0.009	0.010	0.010	0.010	0.010	0.011	0.011
	Primary agriculture	-0.012	-0.024	-0.037	-0.051	-0.050	-0.050	-0.050	-0.051	-0.051	-0.051	-0.052	-0.052	-0.054
	Agricultural-related	-0.006	-0.012	-0.019	-0.027	-0.026	-0.025	-0.025	-0.025	-0.025	-0.025	-0.025	-0.025	-0.025
	All and related agriculture	-0.008	-0.017	-0.026	-0.036	-0.035	-0.035	-0.035	-0.035	-0.035	-0.035	-0.035	-0.035	-0.037
	All other industries	0.002	0.003	0.005	0.007	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
	All industries	0.002	0.003	0.004	0.005	0.005	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004

Table A3: Trade Volumes – AUS and USA (percentage deviations from baseline values)

	Variable	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2020
	AUS to USA													
Wheat	Wheat	5.0	10.3	15.9	21.9	22.1	22.3	22.4	22.5	22.5	22.6	22.6	22.7	22.8
OthGrain	Other grains	2.6	5.3	8.1	11.0	11.2	11.3	11.5	11.6	11.6	11.7	11.7	11.8	12.0
Crops	Crops excluding grains	10.0	21.1	33.3	46.8	47.0	47.2	47.3	47.4	47.5	47.6	47.7	47.7	47.9
Animal	Animal products	0.7	1.5	2.4	3.3	3.5	3.7	3.8	3.9	4.0	4.1	4.1	4.2	4.4
Milk	Raw milk	-0.3	-0.6	-0.9	-1.2	-1.0	-0.8	-0.7	-0.6	-0.6	-0.5	-0.4	-0.4	-0.3
Wool	Wool	5.6	11.5	17.5	23.8	23.9	24.0	24.1	24.2	24.3	24.4	24.4	24.5	24.8
Forestry	Forestry	-0.1	-0.2	-0.2	-0.2	0.0	0.2	0.3	0.4	0.5	0.6	0.6	0.7	0.8
Fishing	Fishing	0.5	1.1	1.7	2.4	2.6	2.8	2.9	2.9	3.0	3.0	3.1	3.1	3.2
Mining	Mining	0.3	0.7	1.1	1.6	1.9	2.0	2.1	2.2	2.3	2.3	2.4	2.4	2.5
Meat	Meat products	4.2	8.7	13.4	18.3	18.5	18.7	18.8	18.9	19.0	19.0	19.1	19.1	19.3
VegOils	Vegetable oils and fats	2.1	4.3	6.6	9.0	9.3	9.4	9.5	9.6	9.7	9.8	9.8	9.9	10.0
DairyProds	Dairy products	38.4	91.2	163.8	262.8	263.7	264.3	264.7	265.1	265.3	265.5	265.7	265.9	266.5
Sugar	Sugar products	6.2	12.8	19.8	27.3	27.6	27.8	27.9	28.0	28.1	28.1	28.2	28.2	28.3
Foodnec	Food products nec	2.6	5.3	8.1	11.1	11.4	11.6	11.7	11.8	11.9	12.0	12.0	12.1	12.2
Drinks	Beverages and tobacco products	5.8	12.1	18.9	26.1	26.6	26.9	27.1	27.3	27.4	27.5	27.6	27.7	28.0
Textiles	Textiles, tex prods. & wool scouring	8.4	17.6	27.7	38.7	39.0	39.2	39.3	39.5	39.6	39.6	39.7	39.8	40.0
TCFnec	Clothing and footwear	14.3	30.7	49.8	71.8	72.5	73.0	73.3	73.6	73.8	74.0	74.2	74.3	74.8
Wood	Wood products	1.2	2.5	3.9	5.3	5.6	5.8	6.0	6.1	6.2	6.3	6.3	6.4	6.6
Paper	Paper products	1.8	3.8	5.8	8.0	8.2	8.3	8.4	8.5	8.6	8.6	8.7	8.7	8.9
Petrol	Petroleum products	36.2	85.5	152.6	243.7	244.1	244.4	244.5	244.7	244.8	244.9	245.0	245.1	245.3
Chemicals	Chemicals nec	1.2	2.4	3.8	5.2	5.4	5.5	5.6	5.7	5.8	5.8	5.9	5.9	6.0
BuildProds	Non-metalic building products	4.8	10.0	15.5	21.3	21.7	22.0	22.2	22.3	22.4	22.5	22.6	22.7	22.9
Metals	Basic metals	0.0	0.1	0.3	0.6	0.9	1.1	1.3	1.4	1.5	1.6	1.7	1.7	1.9
MetalProds	Meltal products	2.3	4.8	7.5	10.2	10.6	10.8	10.9	11.1	11.2	11.3	11.3	11.4	11.6
MVParts	Motor vehicles and parts	2.4	5.0	8.0	11.2	11.8	12.3	12.6	12.9	13.1	13.3	13.4	13.6	14.0
OthTrEquip	Transport equipment nec	0.0	0.3	0.6	1.1	1.5	1.9	2.1	2.3	2.5	2.6	2.7	2.8	3.1
ElecEquip	Electronic equipment	5.3	11.0	17.1	23.5	23.9	24.1	24.3	24.4	24.5	24.6	24.7	24.7	24.9
OthMach	Machinery nec	2.7	5.6	8.7	12.0	12.3	12.5	12.7	12.8	12.9	13.0	13.1	13.1	13.3
Utilities	Electricity, water, gas services	-0.4	-0.6	-0.6	-0.6	-0.2	0.1	0.3	0.5	0.6	0.7	0.8	0.9	1.1
Mannec	Manufacturing nec	6.8	14.2	22.2	30.8	31.2	31.5	31.7	31.8	32.0	32.1	32.2	32.2	32.5
Construction	Construction services	-0.2	-0.3	-0.3	-0.3	0.0	0.1	0.3	0.4	0.4	0.5	0.5	0.6	0.7
Trade	Trade services	3.3	6.7	10.4	14.2	14.4	14.6	14.8	14.9	15.0	15.0	15.1	15.2	15.3
Transport	Transport services	-0.2	-0.3	-0.4	-0.4	-0.2	0.0	0.1	0.2	0.3	0.3	0.4	0.4	0.6
Comm	Communication services	-0.2	-0.3	-0.4	-0.4	-0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.5	0.7
Financial	Financial services	-1.1	-2.1	-3.1	-3.9	-3.7	-3.5	-3.3	-3.2	-3.1	-3.1	-3.0	-3.0	-2.8
OtherBus	Business services	-0.2	-0.4	-0.5	-0.5	-0.3	-0.1	0.0	0.1	0.2	0.2	0.3	0.3	0.5
OtherPrivSer	Private services nec	9.8	20.6	32.5	45.7	46.0	46.2	46.4	46.5	46.6	46.7	46.8	46.9	47.2
OtherPubSer	Public services	-0.2	-0.4	-0.5	-0.6	-0.4	-0.3	-0.2	-0.1	-0.1	0.0	0.0	0.1	0.2
Dwellings	Dwelling services	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Primary agriculture	6.7	13.9	21.8	30.3	30.5	30.8	30.9	31.1	31.2	31.4	31.5	31.6	32.2
	Agricultural-related	6.1	13.2	21.7	32.0	32.3	32.6	32.8	33.0	33.2	33.3	33.5	33.6	34.1
	All and related agriculture	6.2	13.4	21.7	31.6	32.0	32.2	32.5	32.6	32.8	32.9	33.0	33.2	33.7
	All other industries	1.4	2.9	4.6	6.4	6.7	6.8	6.9	7.0	7.0	7.1	7.1	7.1	7.0
	All industries	1.9	4.0	6.4	9.1	9.4	9.5	9.6	9.7	9.7	9.7	9.7	9.7	9.6

Table A3 (continued): Trade Volumes – AUS and USA (percentage deviations from baseline values)

	Variable	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2020
	USA to AUS													
Wheat	Wheat	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1
OthGrain	Other grains	0.2	0.5	0.7	0.9	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.6
Crops	Crops excluding grains	2.1	4.2	6.3	8.4	8.3	8.3	8.2	8.2	8.1	8.1	8.0	8.0	7.8
Animal	Animal products	0.2	0.3	0.4	0.5	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.1
Milk	Raw milk	0.1	0.2	0.2	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0
Wool	Wool	0.4	0.7	1.1	1.5	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.2
Forestry	Forestry	0.1	0.1	0.2	0.2	0.1	0.0	0.0	-0.1	-0.1	-0.1	-0.2	-0.2	-0.3
Fishing	Fishing	0.1	0.1	0.1	0.0	-0.1	-0.1	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	-0.3
Mining	Mining	0.1	0.3	0.4	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4
Meat	Meat products	0.6	1.2	1.7	2.2	2.1	2.1	2.0	2.0	1.9	1.9	1.9	1.8	1.8
VegOils	Vegetable oils and fats	2.5	5.0	7.6	10.3	10.2	10.2	10.2	10.2	10.2	10.1	10.1	10.1	10.0
DairyProds	Dairy products	-9.3	-17.8	-25.5	-32.6	-32.6	-32.6	-32.7	-32.7	-32.7	-32.7	-32.7	-32.7	-32.7
Sugar	Sugar products	3.9	7.9	12.1	16.5	16.4	16.4	16.4	16.4	16.4	16.3	16.3	16.3	16.2
Foodnec	Food products nec	3.4	7.0	10.5	14.2	14.1	14.0	13.9	13.8	13.7	13.7	13.6	13.6	13.4
Drinks	Beverages and tobacco products	5.0	10.1	15.4	20.8	20.5	20.3	20.2	20.0	19.9	19.8	19.7	19.6	19.3
Textiles	Textiles, tex prods. & wool scouring	10.2	21.4	33.7	47.1	47.0	47.0	46.9	46.9	46.9	46.8	46.8	46.8	46.6
TCFnec	Clothing and footwear	35.0	81.7	143.9	226.2	225.8	225.5	225.3	225.1	224.9	224.8	224.8	224.7	224.5
Wood	Wood products	4.8	9.8	15.0	20.3	20.1	19.9	19.8	19.7	19.6	19.5	19.5	19.5	19.3
Paper	Paper products	2.2	4.5	6.7	9.0	8.9	8.8	8.8	8.7	8.7	8.7	8.7	8.6	8.5
Petrol	Petroleum products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chemicals	Chemicals nec	2.5	5.0	7.6	10.2	10.1	10.1	10.1	10.1	10.0	10.0	10.0	10.0	9.9
BuildProds	Non-metalic building products	5.8	11.9	18.1	24.6	24.4	24.2	24.1	24.0	23.9	23.8	23.8	23.8	23.6
Metals	Basic metals	3.9	8.0	12.1	16.4	16.2	16.2	16.1	16.1	16.0	16.0	16.0	15.9	15.9
MetalProds	Meltal products	8.0	16.6	25.7	35.5	35.3	35.1	35.0	34.9	34.9	34.8	34.8	34.7	34.6
MVParts	Motor vehicles and parts	10.5	21.6	33.5	46.0	45.5	45.0	44.6	44.3	44.1	43.8	43.6	43.4	42.7
OthTrEquip	Transport equipment nec	0.7	1.4	1.9	2.5	2.2	2.0	1.9	1.8	1.8	1.7	1.7	1.6	1.6
ElecEquip	Electronic equipment	1.2	2.3	3.4	4.6	4.5	4.4	4.3	4.3	4.3	4.3	4.3	4.3	4.2
OthMach	Machinery nec	4.2	8.5	12.9	17.3	17.1	17.0	16.9	16.8	16.7	16.6	16.6	16.5	16.4
Utilities	Electricity, water, gas services	0.1	0.2	0.2	0.2	0.0	-0.1	-0.2	-0.3	-0.4	-0.4	-0.5	-0.5	-0.6
Mannec	Manufacturing nec	4.5	9.1	13.9	18.9	18.8	18.8	18.7	18.7	18.7	18.7	18.7	18.7	18.7
Construction	Construction services	0.2	0.3	0.4	0.5	0.3	0.2	0.1	0.1	0.0	0.0	-0.1	-0.1	-0.2
Trade	Trade services	0.1	0.2	0.2	0.2	0.1	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2
Transport	Transport services	0.1	0.1	0.1	0.1	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2
Comm	Communication services	0.1	0.1	0.1	0.1	0.0	0.0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.3
Financial	Financial services	0.1	0.2	0.2	0.2	0.1	0.1	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.2
OtherBus	Business services	0.1	0.2	0.2	0.3	0.2	0.1	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.2
OtherPrivSer	Private services nec	0.1	0.2	0.2	0.2	0.1	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2
OtherPubSer	Public services	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0
Dwellings	Dwelling services	0.3	0.5	0.5	0.5	0.1	-0.1	-0.3	-0.4	-0.5	-0.6	-0.7	-0.7	-0.9
	Primary agriculture	1.7	3.4	5.1	6.8	6.7	6.6	6.6	6.5	6.5	6.4	6.4	6.3	6.1
	Agricultural-related	3.5	7.2	10.9	14.8	14.7	14.6	14.5	14.5	14.4	14.4	14.4	14.4	14.3
	All and related agriculture	3.0	6.1	9.3	12.5	12.4	12.3	12.2	12.2	12.1	12.1	12.0	12.0	11.8
	All other industries	3.2	6.6	10.2	14.1	13.9	13.8	13.8	13.7	13.7	13.7	13.6	13.6	13.6
	All industries	3.2	6.6	10.2	14.0	13.9	13.8	13.7	13.7	13.6	13.6	13.6	13.6	13.6

Table A4: Australian Regional Variables (percentage deviations from baseline values)

Variable	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2020
Real Value Added													
NSW	0.027	0.056	0.088	0.122	0.129	0.137	0.144	0.151	0.156	0.160	0.164	0.166	0.174
Vic	0.028	0.056	0.086	0.119	0.119	0.123	0.126	0.129	0.131	0.133	0.133	0.134	0.130
QLD	0.050	0.099	0.149	0.202	0.195	0.194	0.196	0.198	0.200	0.202	0.203	0.205	0.208
SA	0.020	0.041	0.064	0.088	0.097	0.106	0.113	0.119	0.123	0.126	0.129	0.130	0.131
WA	0.021	0.049	0.082	0.121	0.138	0.153	0.166	0.176	0.185	0.192	0.198	0.203	0.218
Tas	0.044	0.090	0.139	0.194	0.193	0.195	0.199	0.202	0.205	0.207	0.209	0.210	0.213
Melbourne (D1)	0.024	0.045	0.064	0.082	0.078	0.079	0.081	0.082	0.084	0.085	0.085	0.085	0.082
Barwon (D2)	0.016	0.031	0.049	0.069	0.073	0.079	0.083	0.086	0.088	0.089	0.089	0.088	0.079
Western District (D3)	0.053	0.132	0.240	0.382	0.411	0.431	0.446	0.456	0.462	0.467	0.469	0.470	0.465
Central Highlands (D4)	0.018	0.035	0.052	0.070	0.077	0.083	0.089	0.093	0.096	0.098	0.099	0.100	0.096
Wimmera (D5)	0.045	0.106	0.179	0.261	0.304	0.333	0.354	0.369	0.379	0.386	0.391	0.393	0.393
Mallee (D6)	0.050	0.114	0.192	0.285	0.312	0.331	0.345	0.355	0.361	0.366	0.368	0.370	0.366
Loddon-Campaspe (D7)	0.033	0.070	0.112	0.160	0.168	0.176	0.183	0.188	0.192	0.195	0.196	0.197	0.195
Goulbourn (D8)	0.058	0.134	0.232	0.357	0.369	0.378	0.385	0.390	0.393	0.394	0.394	0.394	0.383
Ovens-Murray (D9)	0.053	0.112	0.177	0.250	0.258	0.266	0.272	0.277	0.280	0.282	0.283	0.284	0.279
East Gippsland (D10)	0.038	0.089	0.157	0.243	0.264	0.281	0.294	0.304	0.311	0.317	0.321	0.325	0.332
Gippsland (D11)	0.048	0.106	0.177	0.265	0.271	0.277	0.283	0.287	0.291	0.293	0.294	0.295	0.292
Employment													
NSW	0.032	0.050	0.061	0.067	0.035	0.018	0.010	0.005	0.002	0.001	0.000	0.000	0.002
Vic	0.031	0.047	0.056	0.060	0.025	0.006	-0.005	-0.013	-0.017	-0.021	-0.024	-0.026	-0.034
QLD	0.056	0.095	0.125	0.151	0.106	0.081	0.066	0.057	0.052	0.048	0.046	0.044	0.042
SA	0.024	0.035	0.038	0.037	0.010	-0.004	-0.012	-0.016	-0.019	-0.021	-0.022	-0.023	-0.026
WA	0.033	0.054	0.069	0.081	0.053	0.039	0.033	0.030	0.029	0.029	0.030	0.031	0.038
Tas	0.049	0.085	0.115	0.144	0.106	0.086	0.074	0.067	0.063	0.060	0.058	0.057	0.055
Melbourne (D1)	0.027	0.035	0.032	0.021	-0.019	-0.041	-0.054	-0.063	-0.068	-0.072	-0.076	-0.078	-0.086
Barwon (D2)	0.020	0.025	0.022	0.015	-0.016	-0.033	-0.044	-0.050	-0.055	-0.059	-0.062	-0.065	-0.077
Western District (D3)	0.056	0.124	0.213	0.330	0.325	0.325	0.327	0.328	0.329	0.329	0.329	0.329	0.322
Central Highlands (D4)	0.021	0.027	0.026	0.018	-0.010	-0.025	-0.033	-0.038	-0.042	-0.044	-0.046	-0.048	-0.055
Wimmera (D5)	0.052	0.110	0.172	0.240	0.255	0.267	0.276	0.284	0.289	0.293	0.296	0.297	0.297
Mallee (D6)	0.055	0.112	0.175	0.249	0.245	0.245	0.247	0.249	0.251	0.252	0.253	0.253	0.250
Loddon-Campaspe (D7)	0.037	0.064	0.086	0.109	0.083	0.070	0.063	0.059	0.057	0.055	0.053	0.052	0.047
Goulbourn (D8)	0.061	0.126	0.203	0.301	0.278	0.266	0.260	0.255	0.252	0.249	0.247	0.244	0.232
Ovens-Murray (D9)	0.055	0.101	0.145	0.191	0.165	0.151	0.144	0.139	0.135	0.133	0.131	0.129	0.121
East Gippsland (D10)	0.053	0.104	0.161	0.229	0.206	0.194	0.189	0.186	0.185	0.184	0.184	0.183	0.183
Gippsland (D11)	0.059	0.112	0.169	0.236	0.199	0.179	0.166	0.159	0.154	0.150	0.147	0.145	0.137

Table A5: Australian Regional Variables (absolute deviations from baseline values)

Variable	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2020
Real Value Added (US $m, 2003 prices)													
NSW	39.9	87.6	144.5	210.7	235.6	260.5	283.2	303.4	321.1	336.6	350.3	362.5	408.9
Vic	29.7	63.1	101.9	146.7	157.7	169.8	180.9	190.5	198.5	205.0	210.2	214.3	223.3
QLD	37.8	78.1	122.9	173.1	177.4	184.8	193.1	201.4	209.3	216.6	223.5	229.8	257.0
SA	6.8	15.2	25.3	36.9	43.2	48.9	53.9	58.2	61.7	64.6	67.0	69.0	74.7
WA	10.1	24.6	43.4	66.6	80.1	92.1	102.7	112.0	120.3	127.7	134.4	140.6	166.9
Tas	4.6	9.8	15.9	23.0	24.2	25.6	27.0	28.3	29.5	30.7	31.7	32.6	36.5
Melbourne (VIC)	18.7	37.2	56.7	77.0	80.3	85.6	91.0	95.6	99.4	102.2	104.2	105.5	103.7
Barwon (VIC)	0.9	1.9	3.1	4.6	5.3	6.0	6.5	6.9	7.3	7.5	7.6	7.7	7.2
Western District (VIC)	1.2	3.0	5.7	9.3	10.4	11.3	12.1	12.7	13.3	13.8	14.2	14.6	16.4
Central Highlands (VIC)	0.5	1.1	1.8	2.6	3.0	3.4	3.8	4.1	4.3	4.5	4.6	4.7	4.8
Wimmera (VIC)	0.7	1.7	2.9	4.4	5.3	6.0	6.6	7.1	7.6	7.9	8.3	8.6	9.9
Mallee (VIC)	1.0	2.4	4.3	6.5	7.4	8.2	8.8	9.4	9.8	10.2	10.6	11.0	12.4
Loddon-Campaspe (VIC)	1.1	2.5	4.1	6.1	6.7	7.3	7.9	8.3	8.7	9.0	9.3	9.6	10.5
Goulbourn (VIC)	2.3	5.5	9.7	15.3	16.5	17.5	18.4	19.2	19.9	20.5	21.0	21.5	23.6
Ovens-Murray (VIC)	1.1	2.3	3.8	5.6	6.0	6.5	6.8	7.1	7.4	7.7	7.9	8.1	8.8
East Gippsland (VIC)	0.7	1.6	3.0	4.8	5.5	6.0	6.5	7.0	7.3	7.7	8.0	8.3	9.7
Gippsland (VIC)	1.7	3.9	6.8	10.4	11.2	11.9	12.5	13.1	13.6	14.0	14.4	14.8	16.3
Employment (thousand persons)													
NSW	0.9	1.4	1.8	2.0	1.1	0.6	0.3	0.2	0.1	0.0	0.0	0.0	0.1
Vic	0.7	1.0	1.2	1.3	0.6	0.1	-0.1	-0.3	-0.4	-0.5	-0.6	-0.6	-0.8
QLD	0.9	1.5	2.0	2.4	1.7	1.3	1.1	1.0	0.9	0.8	0.8	0.8	0.8
SA	0.2	0.2	0.3	0.3	0.1	0.0	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2
WA	0.3	0.5	0.6	0.7	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.4
Tas	0.1	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1
Melbourne (VIC)	0.4	0.5	0.5	0.3	-0.3	-0.7	-0.9	-1.1	-1.2	-1.2	-1.3	-1.4	-1.6
Barwon (VIC)	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Western District (VIC)	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Central Highlands (VIC)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wimmera (VIC)	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Mallee (VIC)	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Loddon-Campaspe (VIC)	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Goulbourn (VIC)	0.1	0.1	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Ovens-Murray (VIC)	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
East Gippsland (VIC)	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Gippsland (VIC)	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Table A6: Contributions to the Differences in GSP Deviations (%) in 2020

	Industry	Australia % deviation	NSW	VIC	QLD	SA	WA	TAS
Wheat	Wheat	0.201	0.000	0.000	0.000	0.000	0.000	0.000
OthGrain	Other grains	0.225	0.000	0.000	0.000	0.000	0.000	0.000
Crops	Crops excluding grains	0.590	-0.002	-0.001	0.004	0.004	0.000	0.004
Animal	Animal products	0.579	0.000	-0.001	0.001	0.002	0.000	0.000
Milk	Raw milk	1.913	-0.002	0.004	0.000	-0.001	-0.002	0.007
Wool	Wool	0.622	0.000	0.000	-0.001	0.001	0.000	0.001
Forestry	Forestry	0.151	0.000	0.000	0.000	0.000	0.000	0.000
Fishing	Fishing	0.212	0.000	0.000	0.000	0.000	0.000	0.000
Mining	Mining	0.417	-0.001	-0.009	0.001	-0.004	0.026	-0.003
Meat	Meat products	0.937	0.000	0.000	0.001	0.000	-0.001	0.000
VegOils	Vegetable oils and fats	-0.077	0.000	0.000	0.000	0.000	0.000	0.000
DairyProds	Dairy products	1.933	-0.001	0.004	-0.001	-0.001	-0.003	0.002
Sugar	Sugar products	2.235	0.000	0.000	0.001	-0.001	-0.001	0.000
Foodnec	Food products nec	0.177	0.000	0.000	0.000	0.000	0.000	0.000
Drinks	Beverages and tobacco products	0.365	0.000	0.000	0.000	0.001	0.000	0.000
Textiles	Textiles, tex prods. & wool scouring	0.822	0.000	0.003	-0.002	0.000	-0.001	0.000
TCFnec	Clothing and footwear	-0.011	0.000	0.000	0.000	0.000	0.000	0.000
Wood	Wood products	0.175	0.000	0.000	0.000	0.000	0.000	0.000
Paper	Paper products	0.056	0.000	-0.001	0.001	0.000	0.001	-0.001
Petrol	Petroleum products	0.413	0.000	0.000	0.000	0.000	0.000	0.000
Chemicals	Chemicals nec	-0.063	-0.001	-0.001	0.002	0.002	0.001	0.003
BuildProds	Non-metalic building products	-0.166	0.000	0.000	-0.001	0.000	0.000	0.001
Metals	Basic metals	0.396	0.001	-0.001	-0.001	0.001	0.000	0.001
MetalProds	Meltal products	0.022	0.000	0.000	0.000	0.000	0.000	0.001
MVParts	Motor vehicles and parts	-1.116	0.009	-0.017	0.010	-0.025	0.008	0.006
OthTrEquip	Transport equipment nec	0.691	0.000	0.000	0.000	0.000	0.000	-0.001
ElecEquip	Electronic equipment	1.308	0.001	0.001	-0.003	0.001	-0.002	-0.001
OthMach	Machinery nec	-0.436	-0.001	-0.002	0.002	0.000	0.001	0.004
Utilities	Electricity, water, gas services	0.186	0.000	0.000	0.000	0.000	0.000	0.000
Mannec	Manufacturing nec	0.835	0.000	0.001	0.000	0.001	-0.001	-0.001
Construction	Construction services	0.395	-0.001	-0.004	0.008	-0.005	0.003	0.005
Trade	Trade services	0.152	0.000	-0.003	0.004	-0.002	0.003	0.005
Transport	Transport services	0.238	0.000	-0.001	0.001	-0.001	0.000	0.000
Comm	Communication services	0.172	0.000	0.000	0.000	0.000	0.000	0.000
Financial	Financial services	0.122	0.000	-0.001	0.001	0.000	0.001	0.001
OtherBus	Business services	0.192	0.000	0.000	0.000	0.000	0.000	0.000
OtherPrivSer	Private services nec	0.255	0.000	-0.001	0.001	0.000	0.001	0.001
OtherPubSer	Public services	-0.043	0.003	-0.005	0.006	-0.008	0.010	0.003
Dwellings	Dwelling services	0.150	0.000	-0.002	0.003	-0.002	0.002	0.003
Gap in percentage deviations (GSP deviation – GDP deviation)			0.003	-0.039	0.038	-0.037	0.049	0.043

Table A7: Contributions to the Differences in Victorian GRP (%) Deviations in 2020

	Industry	Victoria % deviation	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11
Wheat	Wheat	0.201	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.000	0.000	0.000
OthGrain	Other grains	0.225	0.000	0.000	0.001	0.001	0.004	0.002	0.001	0.001	0.000	0.000	0.000
Crops	Crops excluding grains	0.590	-0.003	0.000	0.006	0.006	0.031	0.046	0.001	0.008	0.005	0.003	0.001
Animal	Animal products	0.579	-0.003	-0.001	0.012	0.007	0.055	0.025	0.008	0.007	0.003	0.003	-0.001
Milk	Raw milk	1.913	-0.008	0.004	0.076	-0.006	-0.004	0.017	0.005	0.052	0.011	0.037	0.040
Wool	Wool	0.622	-0.002	0.000	0.009	0.005	0.042	0.020	0.002	0.002	0.001	0.003	0.000
Forestry	Forestry	0.151	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
Fishing	Fishing	0.212	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
Mining	Mining	0.417	-0.002	-0.002	-0.003	0.001	0.005	-0.001	0.001	-0.002	-0.003	0.048	0.014
Meat	Meat products	0.937	-0.001	0.002	-0.001	0.000	0.003	-0.001	0.009	0.001	0.002	-0.002	0.000
VegOils	Vegetable oils and fats	-0.077	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DairyProds	Dairy products	1.933	-0.004	0.003	0.048	-0.008	-0.009	0.003	-0.003	0.048	-0.002	0.002	0.014
Sugar	Sugar products	2.235	0.000	-0.001	0.003	-0.001	0.000	0.000	-0.001	-0.002	0.008	-0.001	-0.002
Foodnec	Food products nec	0.177	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
Drinks	Beverages and tobacco products	0.365	0.000	-0.001	-0.001	0.002	0.001	0.005	0.000	0.002	0.003	-0.001	-0.001
Textiles	Textiles, tex prods. & wool scouring	0.822	-0.001	0.010	-0.004	0.001	0.000	-0.005	0.000	-0.001	0.016	-0.005	0.000
TCFnec	Clothing and footwear	-0.011	0.000	0.000	0.001	0.000	0.001	0.001	0.000	0.000	0.000	0.001	0.001
Wood	Wood products	0.175	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Paper	Paper products	0.056	0.000	0.001	0.001	0.001	0.001	0.001	0.000	0.001	0.001	0.001	0.000
Petrol	Petroleum products	0.413	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
Chemicals	Chemicals nec	-0.063	-0.001	0.000	0.002	0.002	0.004	0.003	0.003	0.003	0.003	0.004	0.003
BuildProds	Non-metalic building products	-0.166	0.000	-0.002	0.001	-0.001	0.001	0.002	0.000	0.001	0.001	0.001	0.001
Metals	Basic metals	0.396	0.000	0.006	0.016	0.000	-0.002	-0.002	-0.001	-0.001	-0.002	-0.002	-0.002
MetalProds	Meltal products	0.022	0.000	0.000	0.000	0.000	0.001	0.001	0.000	0.000	0.000	0.001	0.000
MVParts	Motor vehicles and parts	-1.116	-0.003	-0.048	0.029	-0.013	0.029	0.027	0.017	0.024	0.023	0.029	0.024
OthTrEquip	Transport equipment nec	0.691	0.000	0.001	-0.002	-0.001	-0.002	-0.002	0.000	-0.001	-0.002	0.000	-0.001
ElecEquip	Electronic equipment	1.308	0.001	-0.005	-0.005	-0.004	-0.004	-0.005	-0.004	-0.004	0.018	-0.004	-0.005
OthMach	Machinery nec	-0.436	-0.001	0.005	0.006	-0.006	0.008	0.003	-0.005	0.003	0.001	0.008	0.006
Utilities	Electricity, water, gas services	0.186	-0.001	0.000	0.000	0.000	0.000	0.001	0.000	0.001	0.001	0.001	0.007
Mannec	Manufacturing nec	0.835	0.000	-0.001	-0.001	-0.001	-0.001	-0.001	0.000	-0.001	-0.001	-0.001	-0.001
Construction	Construction services	0.359	-0.003	-0.001	0.016	-0.002	0.005	0.008	0.005	0.016	0.008	0.011	0.012
Trade	Trade services	0.129	-0.005	-0.004	0.033	-0.002	0.023	0.028	0.007	0.026	0.015	0.018	0.014
Transport	Transport services	0.226	-0.001	-0.001	0.004	0.000	0.004	0.004	0.002	0.005	0.002	0.001	0.000
Comm	Communication services	0.163	0.000	0.000	0.002	0.000	0.001	0.001	0.001	0.001	0.001	0.000	0.001
Financial	Financial services	0.113	-0.001	0.000	0.004	0.001	0.004	0.003	0.002	0.004	0.002	0.003	0.003
OtherBus	Business services	0.187	0.000	-0.001	-0.001	-0.002	-0.003	-0.001	-0.001	-0.001	-0.001	-0.001	0.000
OtherPrivSer	Private services nec	0.234	-0.001	-0.001	0.007	0.000	0.003	0.003	0.003	0.005	0.003	0.004	0.003
OtherPubSer	Public services	-0.071	-0.007	-0.009	0.052	-0.010	0.046	0.040	0.008	0.038	0.019	0.030	0.025
Dwellings	Dwelling services	0.117	-0.004	-0.003	0.025	-0.002	0.023	0.020	0.005	0.019	0.010	0.013	0.010
Gap in percentage deviations (GRP deviation – GSP (Vic) deviation)			-0.049	-0.048	0.338	-0.033	0.269	0.241	0.066	0.254	0.147	0.205	0.167

Table A8: Industry Employment in Victoria and Victorian Sub-State Regions in 2020 (absolute deviations ('000 persons) from baseline values)

	Industry	Victoria	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11
Wheat	Wheat	0.005	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.002	0.000	0.000	0.000
OthGrain	Other grains	0.046	0.002	0.003	0.003	0.016	0.009	0.005	0.002	0.004	0.001	0.001	0.001
Crops	Crops excluding grains	0.293	0.101	0.023	0.008	0.065	0.022	0.037	0.004	0.017	0.006	0.004	0.006
Animal	Animal products	0.130	0.005	0.009	0.008	0.045	0.025	0.015	0.005	0.010	0.003	0.003	0.002
Milk	Raw milk	0.525	0.044	0.092	0.089	0.026	0.004	0.026	0.014	0.111	0.018	0.035	0.067
Wool	Wool	0.105	0.005	0.008	0.007	0.037	0.022	0.013	0.003	0.005	0.002	0.002	0.001
Forestry	Forestry	0.007	0.002	0.001	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.001	0.000
Fishing	Fishing	0.003	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
Mining	Mining	0.035	0.021	0.002	0.000	0.004	0.001	0.000	0.001	0.000	0.000	0.004	0.002
Meat	Meat products	0.138	0.086	0.018	0.001	0.015	0.003	0.001	0.007	0.004	0.003	0.000	0.002
VegOils	Vegetable oils and fats	-0.011	-0.005	0.000	0.000	-0.004	0.000	0.000	0.000	-0.001	0.000	0.000	0.000
DairyProds	Dairy products	0.120	0.066	0.014	0.010	0.002	0.000	0.002	0.001	0.017	0.001	0.001	0.005
Sugar	Sugar products	0.118	0.099	0.003	0.003	0.005	0.001	0.001	0.001	0.000	0.005	0.000	0.000
Foodnec	Food products nec	-0.004	-0.003	0.000	0.000	-0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Drinks	Beverages and tobacco products	0.009	0.005	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Textiles	Textiles, tex prods. & wool scouring	0.180	0.116	0.034	0.001	0.016	0.001	0.000	0.002	0.002	0.005	0.000	0.002
TCFnec	Clothing and footwear	-0.071	-0.063	-0.004	0.000	-0.003	0.000	0.000	0.000	-0.001	0.000	0.000	0.000
Wood	Wood products	0.026	0.020	0.002	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Paper	Paper products	-0.105	-0.092	-0.004	0.000	-0.004	0.000	0.000	-0.001	-0.001	-0.001	0.000	-0.001
Petrol	Petroleum products	0.002	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Chemicals	Chemicals nec	-0.093	-0.082	-0.006	0.000	-0.003	0.000	0.000	0.000	-0.001	0.000	0.000	0.000
BuildProds	Non-metalic building products	-0.101	-0.070	-0.013	0.000	-0.013	0.000	0.000	-0.001	-0.001	-0.001	0.000	-0.001
Metals	Basic metals	0.041	0.025	0.009	0.003	0.003	0.000	0.000	0.000	0.001	0.000	0.000	0.000
MetalProds	Meltal products	-0.085	-0.068	-0.006	-0.001	-0.005	0.000	0.000	-0.001	-0.002	-0.001	0.000	-0.001
MVParts	Motor vehicles and parts	-1.138	-0.824	-0.181	-0.001	-0.117	-0.001	-0.001	-0.004	-0.004	-0.002	0.000	-0.003
OthTrEquip	Transport equipment nec	0.063	0.051	0.007	0.000	0.003	0.000	0.000	0.001	0.000	0.000	0.000	0.000
ElecEquip	Electronic equipment	0.120	0.112	0.001	0.000	0.002	0.000	0.000	0.000	0.001	0.005	0.000	0.000
OthMach	Machinery nec	-0.228	-0.180	-0.008	-0.001	-0.028	-0.001	-0.002	-0.003	-0.003	-0.002	0.000	-0.001
Utilities	Electricity, water, gas services	-0.042	-0.024	-0.004	0.000	-0.005	0.000	-0.001	-0.001	-0.002	-0.001	-0.001	-0.004
Mannec	Manufacturing nec	0.485	0.446	0.014	0.001	0.011	0.001	0.001	0.004	0.003	0.001	0.001	0.002
Construction	Construction services	0.362	0.229	0.026	0.012	0.029	0.006	0.009	0.006	0.019	0.007	0.007	0.012
Trade	Trade services	-0.658	-0.638	-0.055	0.018	-0.049	0.010	0.014	0.000	0.023	0.004	0.006	0.007
Transport	Transport services	-0.028	-0.032	-0.002	0.001	-0.002	0.001	0.001	0.000	0.002	0.001	0.001	0.001
Comm	Communication services	-0.055	-0.048	-0.003	0.000	-0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Financial	Financial services	-0.189	-0.171	-0.007	0.000	-0.008	0.000	0.000	-0.001	0.000	0.000	0.000	-0.001
OtherBus	Business services	0.093	0.074	0.005	0.001	0.005	0.001	0.001	0.001	0.002	0.001	0.001	0.002
OtherPrivSer	Private services nec	0.249	0.169	0.015	0.007	0.023	0.004	0.004	0.004	0.010	0.004	0.004	0.006
OtherPubSer	Public services	-1.125	-0.975	-0.095	0.016	-0.109	0.010	0.009	-0.004	0.015	0.001	0.004	0.002
Dwellings	Dwelling services	-0.001	-0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total		-0.778	-1.596	-0.099	0.186	-0.039	0.119	0.136	0.039	0.234	0.060	0.074	0.108