

Australia

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1. Introduction

The Australian contribution to the GTAP 9 Data Base is based on the Australian Bureau of Statistics (ABS) 2009-10 I-O tables. The contribution follows the unified format for a single region I-O table (Huff, McDougall and Walmsley 2000). Specifically, the submission includes the following:

- the supply and use of commodities with commodity tax excluded (array *UF*)
- the supply and use of commodities with commodity tax included (array *UP*)
- output of each sector with non-commodity indirect tax included (array *OP*)
- imports by commodity with import duties excluded (array *MF*)
- sector names (array *SSET*)
- a mapping from standard GTAP sectors.

The ABS 2009-10 I-O tables were not initially in a format consistent with GTAP requirements. As a result, several transformations were applied to the source data. These transformations were consistent with Australia's previous contributions to the GTAP database. The processes used to generate the transformations are streamlined and simple to replicate given an understanding of I-O structures, ABS conventions and the GEMPACK software package.

The submission of this Australian I-O table was undertaken as part of the Productivity Commission's commitment as a member of the GTAP consortium.

2. Source data

Electronic versions of the ABS 2009-10 I-O tables (ABS 2013) formed the basis of Australia's GTAP version 9 database contribution. Four tables were used:

- a commodity-by-industry I-O table (ABS I-O table 2, '*Use table*')
- a non-diagonal make matrix (ABS I-O table 1, '*Australian supply table*')
- an imports array (ABS I-O table 3, '*Imports*')
- a commodity tax array (ABS I-O table 35, '*Net taxes on products by product group*').

The Monash Multi Region Forecasting model (MMRF) database was also considered as a source. This database was not used because the version that was available (2005-06) was less recent than the ABS I-O data.

Table 1. Array dimensions

<i>Array</i>	<i>Dimensions</i>
Use table	119 × 121
Australian supply table	114 × 114
Imports	119 × 121
Net taxes on products by product group	114 × 121

Source(s): ABS (2013).

3. Source data transformations

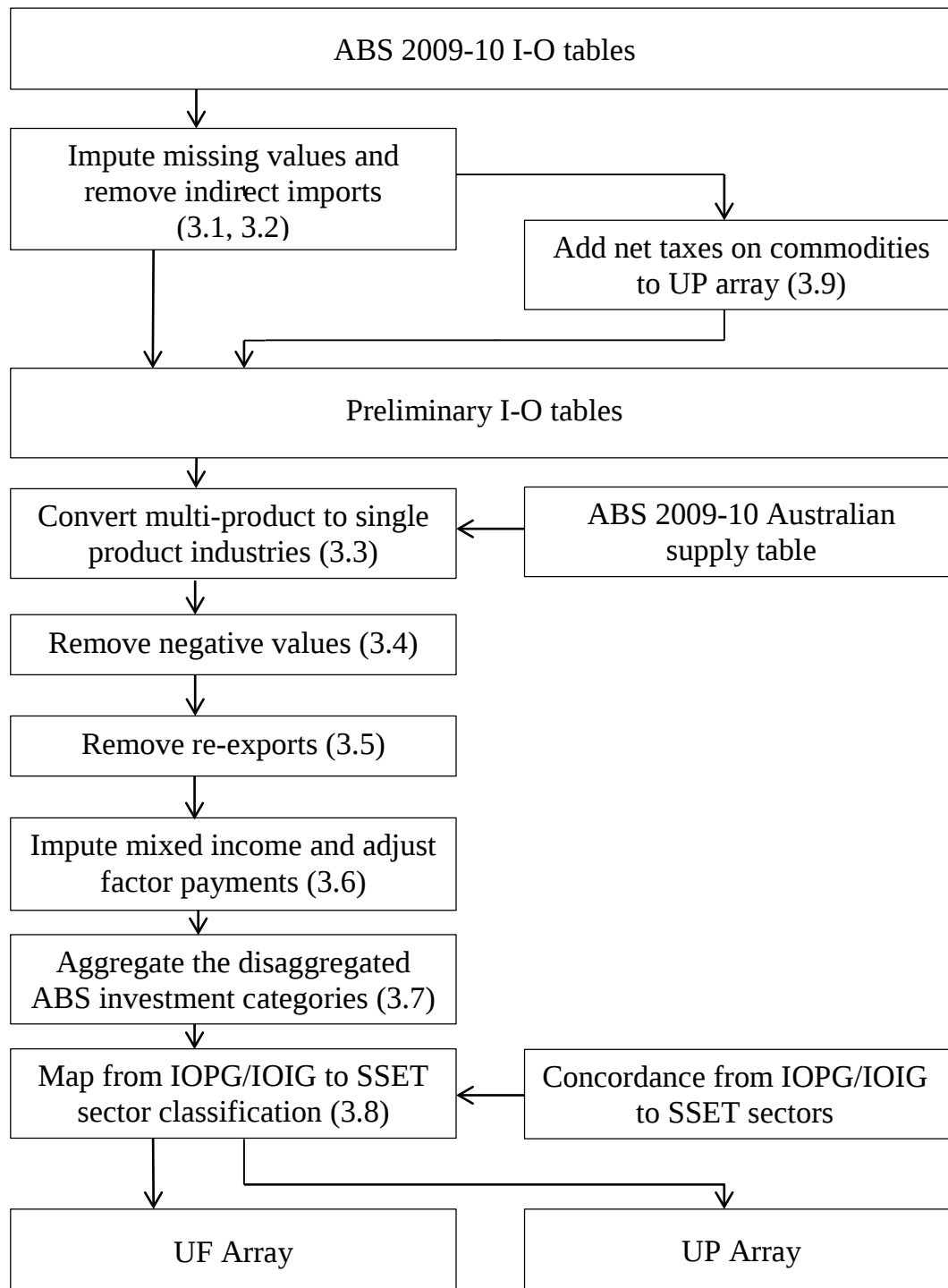
Several transformations were applied to the source data to meet GTAP requirements (figure 1), including:

- imputing missing values
- removing indirectly allocated imports
- transforming the ‘multi-product industry’ (commodity-by-industry) use tables to a ‘single product industry’ (commodity-by-commodity) table
- removing negative values where appropriate
- removing re-exports
- imputing mixed income and adjusting factor payments accordingly
- aggregating the disaggregated ABS investment categories
- mapping from each input-output product group (IOPG) classifications to SSET sector classifications
- introducing net commodity taxes

The transformation process treated the domestic and imported components of arrays *UF* and *UP* separately. Where appropriate, each transformation was applied to both the domestic and imported component arrays. The domestic and imported component arrays were then combined to form *UF* and *UP*.

Figure 1. Creating the Australian GTAP 9 I-O tables

Relevant subsection in parentheses



3.1 Missing values

The ABS does not provide data on the uses of certain goods for confidentiality reasons. In particular, data on domestic final use for two IOPG categories — ‘Air and Space Transport’ and ‘Postal and Courier Pick-up and Delivery Service’ are not provided. These values are, however, included in the calculation of total use and domestic production, allowing reasonable values to be imputed.

3.2 Indirect imports

The source data adopts an indirect treatment of imports where the uses of imported and domestic goods are combined into a single array. GTAP requires separate use values for domestic and import commodities. The GTAP specification was achieved by subtracting the use value for imports (sourced from the ABS imports table) from the combined use array.

3.3 Multi-product to single-product industries

GTAP requires that each industry produce a single product. However, all industries in the domestic use table are multi-product industries (for instance, the industry ‘Poultry and other livestock’ produces ‘Poultry and other livestock’ and ‘Meat and Meat product manufacturing’ products).

The process used for transforming the domestic use table to a single product industry structure is as follows:

- All outputs produced by an industry were assumed to be produced with the same input structure.
- Shares representing each good’s individual contribution to an industry’s overall production were derived from the ABS supply table.
- These shares were multiplied through the domestic and import use tables to impose a single product industry format while maintaining existing cost structures.

3.4 Negative values

Ninety-six imported and nine domestic commodity uses had minor negative values.

- The negative domestic commodity uses arise because the ABS value of imports was slightly higher than total use (ABS 2013). As a result, removing indirect imports from total use for these commodities (subsection 3.2) generates negative values for domestic use.
- The negative imported commodity uses arise from the ABS treatment of domestic freight and insurance services provided for imported goods.¹

All negative uses were set to zero and the use tables adjusted to satisfy balance conditions. The process to ensure balance after removing negative uses was informed by previous Australian GTAP submissions (Maidment and Gabbittas 2006) and documentation provided by GTAP (Huff, McDougall and Walmsley 2000). Specifically:

- negative values for the domestic intermediate use of ‘Professional, Scientific, Computer and Electronic Equipment Manufacturing’ and ‘Basic Chemical Manufacturing’ were set to zero. To ensure balance, the absolute value of the negative uses were removed from the relevant imported commodity use and total ‘Stocks’
- negative values for the domestic final use of ‘Basic Chemical Manufacturing’ were set to zero and the final use category ‘Stocks’ adjusted to ensure balance
- negative values for the intermediate use of imported ‘Water Transport’ and ‘Air Transport’ were set to zero and exports reduced by the absolute value of the negative use

¹ Domestic freight and insurance services provided by domestic industry for imported goods are counted as domestic production. The ABS removes the relevant values from imports accordingly.

- negative final consumption of domestic ‘Postal and Courier Pick-up and Delivery Service’ was set to zero and exports were adjusted accordingly.

3.5 Re-exports

To meet GTAP requirements, re-exports were removed from the exports final use category in the domestic use table. Balance was achieved by adjusting imports accordingly.²

Re-export values are published for 1283 individual products in disaggregated input-output product classification (IOPG) data. These disaggregated data were aggregated to the higher level IOPG classification.

The ABS does not publish values for the re-export of IOPG products ‘*Tobacco*’, ‘*Pharmaceutical goods, for human use (excluding wadding, gauze, bandages and surgical sutures)*’ and ‘*Human pharmaceutical and medicinal products – commissioned production*’. The value of re-exports of these products is, however, included in the ABS aggregated re-export totals. Hence, the aggregate value of re-exports for these three omitted products is easily calculated and allocated as follows:

- Aggregate re-exports are calculated by summing reported re-exports for individual products and subtracting this from aggregate re-exports reported by the ABS (which includes the missing re-export values).
- Given the relatively small contribution of unprocessed tobacco to the Australian economy, and the comparative ease with which pharmaceutical products can be transported, the aggregate value of re-exports for these three omitted goods was predominately allocated to ‘*Pharmaceutical goods, for human use (excluding wadding, gauze, bandages and surgical sutures)*’ and ‘*Human pharmaceutical and medicinal products – commissioned production*’ — both of which are part of IOPG category ‘*Human pharmaceutical and medicinal product manufacturing*’.

3.6 Factor Payments

The ABS domestic use table provides values for ‘*Compensation of employees*’ and ‘*Gross operating surplus & mixed income*’. GTAP requires values for land, labour and capital factor payments. Therefore, two transformations were required:

- separating ‘mixed income’ — which is the return to labour and capital generated by unincorporated enterprises — from gross operating surplus, and apportioning mixed income to labour and capital (table 6)
- imputing returns to land in the agricultural sectors (table 7).
Separating gross mixed income from gross operating surplus and assigning gross mixed income to capital and labour was achieved by using previous work done to allocate mixed income in producing the 2005-06 MMRF database, which is based on the 2005-06 ABS I-O tables (ABS 2010). Specifically:
 - For each Australian and New Zealand Standard Industry Classification (ANZSIC) industry, the labour component of gross mixed income was calculated by subtracting ‘*Compensation of employees*’ in the 2005-06 ABS I-O table (ABS 2010) from labour factor payments in the 2005-06 MMRF database.

² Re-exports exceeded intermediate imports in four industries. In this instance, the difference between re-exports and intermediate imports was subtracted from ‘Stocks’.

- The ratio of the labour component of mixed income to ABS 2005-06 '*Gross operating surplus & mixed income*'³ was calculated and used to impute the labour component of gross mixed income in the 2009-10 ABS I-O tables.
- The labour component of gross mixed income was subtracted from '*Gross operating surplus & mixed income*' and allocated to '*Compensation of employees*'. This allowed '*Gross operating surplus & mixed income*' to be interpreted as payments to capital and '*Compensation of employees*' to be interpreted as payments to labour.

This approach assumes that the ratio of the labour component of gross mixed income to '*Gross operating surplus & mixed income*' in the 2005-06 database is a reasonable approximation for 2009-10 values. It also assumes all differences between labour payments in the MMRF database and '*Compensation of employees*' in the ABS I-O table (aside from those originating from agricultural industries) are due to the allocation of mixed income.

Factor payments to land were imputed using the ratio of land to capital factor payments in the 2005-06 MMRF database. The land to capital factor payments ratio was applied to 2009-10 ABS '*Gross operating surplus & mixed income*' values, generating the required factor payments. This assumes the ratio of land to capital factor payments in agricultural industries in the 2005-06 database is a reasonable approximation for 2009-10 values.

3.7 Aggregating investment

The ABS 2009-10 I-O tables include three disaggregated measures of investment— '*Gross fixed capital formation — Private*', '*Gross fixed capital formation — Public enterprise*' and '*Gross fixed capital formation — General government*'. These categories were aggregated to a single investment final use category to meet GTAP requirements (table 2).

3.8 GTAP sectors

ABS IOPG products were mapped to either single or multiple GTAP sectors (table 5). Of the 114 IOPG products, 98 were mapped directly to a GTAP sector, while 14 were mapped to multiple GTAP sectors (table 4)⁴. Mapping from a single IOPG product to multiple GTAP sectors involved several steps:

- Each IOPG product was decomposed into its 'building blocks', that is, its component IOPG products.
- Each IOPG product was allocated to a single GTAP sector.
- Weights were calculated by dividing each use of a GTAP sector by the relevant use of the IOPG product. This produced an array of weights for each use of each relevant GTAP sector.
- These weights were applied to each relevant IOPG product. This created the row mapping.

³ The labour component of mixed income to '*Gross operating surplus & mixed income*' ratio and the labour component of mixed income to '*Compensation of employees*' ratio were both considered for use in imputing labour mixed income. Analysis suggested the labour component of mixed income to '*Gross operating surplus & mixed income*' produced estimates that were less prone to forecasting error when the factor intensities within industries fluctuate over time. This was established through numerical analysis using hypothetical data.

⁴ As suggested by GTAP documentation (Horridge et al. 2008), 2 agricultural IOPG products were not disaggregated but an indicative mapping was submitted (table 3). According to GTAP guidance, IOPG product '*Meat and meat product manufacturing*' was partially mapped to the sector '*Meat*'. '*Meat*' is an aggregation of GTAP sectors '*Cmt*' and '*Omt*'.

- Column mappings were achieved by applying the ratio of row totals (commodity use totals) in each row mapping to the relevant column.

3.9 Net commodity taxes

Following the unified format for a single region I-O table (Huff, McDougall and Walmsley 2000), the array, *UP*, includes intermediate and final use of each commodity, commodity tax inclusive.

The ABS ‘*Net taxes on products by product group*’ array provided net taxes on IOPG product by intermediate and final use. For ease of computation, the net taxes on products by product group array were combined with the domestic and import use tables, and the resulting tables were transformed according to figure 1. This produced array *UP*.

3.10 Balance checks

Initial estimation of missing values (described in the missing values subsection) generated a rounding error resulting in total sales of ‘*Postal and courier pick-up and delivery service*’ exceeding total costs by \$300,000. This rounding error was due to limitations in the accuracy of the ABS source data and was accounted for by subtracting \$300,000 from the corresponding ‘*Stocks*’ value.

The transformed I-O table is balanced in the sense that total sales equal total costs.

4. Comparison with previous GTAP submissions

Australia’s contribution to the GTAP version 7 database used ABS 2005-06 I-O data. The 2005-06 I-O tables used slightly different industry classifications than the 2009-10 I-O tables. The contribution to the GTAP version 6 database primarily used the ABS 1996-97 I-O tables with significant modification, as a result of the SNA93 treatment of transport margins. The ABS have addressed this deficiency and SNA68 standards for transport margins were adopted in the ABS 2009-10 I-O data.

Many of the transformations adopted in this submission were guided by previous Australian contributions to GTAP, particularly the contribution to the version 6 GTAP database (Maidment and Gabbittas 2006, p. 6).

5. Diagnostics

Prior to final submission, the Australian I-O contribution was checked to ensure:

1. total sales equalled total costs. Total sales must equal total costs to maintain zero profit conditions and to meet GTAP requirements.
2. there were no negative values except where appropriate. GTAP requirements state all commodity use (except ‘*Stocks*’) should be nonnegative.
3. the value of GDP — GDP(I) and GDP(E) — was consistent with the underlying ABS 2009-10 I-O data.

References

- ABS 2010, *Australian National Accounts: Input-Output Tables, 2005-2006*, Cat. no. 5209.0.55.001, ABS, Canberra.
- (Australian Bureau of Statistics) 2013, *Australian National Accounts: Input-Output Tables, 2009-2010*, Cat. no. 5209.0.55.001, ABS, Canberra.
- Horridge, M., McDougall, R., Narayanan, B. and Walmsley, T. 2008, *Exercises in Contributing I-O Tables to the GTAP Data Base*.

- Huff, K., McDougall, R. and Walmsley, T. 2000, *Contributing Input-Output Tables to the GTAP Data Base*, GTAP Technical Paper No. 01.
- Maidment, T. and Gabbitas, O. 2006, *GTAP 6 Data Base Documentation - Chapter 11.B: Australia*, Center for Global Trade Analysis.
- PC (Productivity Commission) 2007, *Potential Benefits of the National Reform Agenda - Productivity Commission Research Paper*, <http://www.pc.gov.au/research/commission/national-reform-agenda> (accessed 3 April 2014).

Appendix

Table 2. Investment aggregation

<i>IOPG sector^a</i>	<i>Gross fixed capital formation^b</i>			<i>Investment</i>
	<i>Private</i>	<i>Public enterprise</i>	<i>General government</i>	
Sheep, grains, beef and dairy cattle	2099.7	0.0	0.0	2099.7
Other agriculture	820.0	0.0	0.0	820.0
Exploration and mining support services	5490.0	0.0	0.0	5490.0
Textile product manufacturing	237.6	20.6	195.0	454.2
Sawmill product manufacturing	92.2	2.7	14.3	109.2
Polymer product manufacturing	677.4	11.4	29.4	718.2
Natural rubber product manufacturing	58.8	0.0	1.3	60.1
Plaster and concrete product manufacturing	3.5	0.0	0.0	3.5
Structural metal product manufacturing	956.0	20.0	20.0	996.0
Metal containers and other sheet metal product manufacturing	1537.8	274.5	180.6	1992.2
Other fabricated metal product manufacturing	168.5	30.2	214.7	413.4
Motor vehicles and parts; other transport equipment manufacturing	3276.9	339.3	844.3	4460.5
Ships and boat manufacturing	537.6	114.5	1377.0	2030.1
Railway rolling stock manufacturing	446.2	1.3	1.7	449.2
Aircraft manufacturing	32.3	0.0	14.3	46.6
Professional, scientific, computer and electronic equipment manufacturing	3585.7	151.3	726.5	4463.5
Electrical equipment manufacturing	686.2	12.7	18.9	717.8
Domestic appliance manufacturing	700.4	96.6	57.3	854.3
Specialised and other machinery and equipment manufacturing	6558.7	116.7	181.3	6856.7
Other manufactured products	11.3	0.3	10.1	21.7
Furniture making	1122.2	135.1	979.2	2236.5
Residential building construction	61010.9	1605.0	1015.2	63631.1
Non-residential building construction	32385.9	1120.3	14666.8	48173.0
Heavy and civil engineering and construction	42514.0	18462.0	15634.0	76610.0
Wholesale trade	14992.1	553.0	1686.8	17231.9
Retail trade	1198.1	60.5	194.9	1453.5
Road transport	1491.9	70.8	226.9	1789.6
Rail transport	6.7	0.2	0.5	7.5
Water, pipeline and other transport	0.8	0.1	0.1	1.0
Postal and courier pick-up and delivery service	97.3	4.1	12.1	113.4
Transport support services and storage	59.5	2.6	12.1	74.1
Publishing (except Internet and music publishing)	218.3	233.7	797.4	1249.4
Motion picture and sound recording	281.0	0.0	491.2	772.2
Broadcasting (except internet)	744.9	0.0	0.0	774.9
Insurance and superannuation funds	1.2	0.0	0.2	1.4
Non-residential property operators and real estate services	4387.7	0.0	0.0	4387.7
Professional, Scientific and Technical Services	20546.7	100.0	3366.0	24012.7
Computer system design and related services	9495.1	250.2	1683.7	11429.0

<i>IOPG sector^a</i>	<i>Gross fixed capital formation^b</i>			
	<i>Private</i>	<i>Public enterprise</i>	<i>General government</i>	<i>Investment</i>
Public administration and regulatory services	170.1	0.0	0.0	170.1
Heritage, creative and performing arts	130.0	0.0	0.0	130.0

^a only sectors with non-zero investment use included. ^bgross fixed capital formation has been subjected to the transformations outlined in subsection 3.3 and hence will not match ABS values exactly.

Source(s): ABS(2013)

Table 3. SSET to GSC2 concordance

Concordance between SSET non-GSC2 sectors and GTAP GSC2 sectors

<i>SSET sector^a</i>	<i>GTAP GSC2 sector</i>
Sheep, grains, beef and dairy cattle	Ctl
	Pdr
	Wht
	Gro
	Rmk
Other agriculture	Wol
	V_f
	C_b
	Ocr
	Pfb
	Ofd
	Pcr
	Osd

^a SSET is the array containing the sector classifications for the submitted I-O tables.

Table 4. Mapping to multiple GTAP sectors

Shares used in mapping from single IOPG products to multiple GTAP sectors

<i>Mapping</i>	<i>Intermediate use^a</i>	<i>Household</i>	<i>Government</i>	<i>Stocks</i>	<i>Exports</i>	<i>Investment</i>
Tanned leather, dressed fur and leather product manufacturing						
Lea	0.97	1.00	1.00	1.00	0.30	1.00
Oap	0.03	0.00	0.00	0.00	0.70	0.00
Knitted product manufacturing						
Tex	0.95	0.96	1.00	1.00	0.17	1.00
Wap	0.05	0.04	0.00	0.00	0.83	0.00
Veterinary Pharmaceutical and medicinal product manufacturing						
Ofd	0.80	0.27	1.00	0.00	0.05	1.00
Crp	0.20	0.73	0.00	1.00	0.95	0.00
Motor vehicles and parts; other transport equipment manufacturing						
Mvh	0.79	0.88	1.00	-0.61	0.86	0.96
Otn	0.21	0.12	0.00	1.61	0.14	0.04
Professional, Scientific, Computer and Electronic equipment manufacturing						
Ele	0.76	0.83	1.0	-1.82	0.43	0.73
Ome	0.24	0.17	0.0	2.82	0.57	0.27
Domestic appliance manufacturing						
Trd	0.80	0.69	1.00	0.73	0.39	0.56
Ele	0.03	0.00	0.00	0.12	0	0.00
Ome	0.17	0.31	0.00	0.13	0.61	0.44
Water supply, sewerage and drainage services						
Wtr	1.00	1.00	0.33	1.00	1.00	1.00
Osg	0.00	0.00	0.67	0.00	0.00	0.00
Insurance and Superannuation Funds						
Isr	1.00	0.42	1.00	1.00	0.92	1.00
Osg	0.00	0.58	0.00	0.00	0.08	0.00

<i>Mapping</i>	<i>Intermediate use^a</i>	<i>Household</i>	<i>Government</i>	<i>Stocks</i>	<i>Exports</i>	<i>Investment</i>
Auxiliary Finance and Insurance services						
Ofi	0.98	1.00	1.00	1.00	0.58	1.00
Isr	0.02	0.00	0.00	0.00	0.42	0.00
Employment, Travel Agency and Other Administrative Services						
Otp	0.94	0.3	0.79	1.00	0.70	1.00
Obs	0.06	0.7	0.21	0.00	0.30	0.00
Oil and Gas extraction						
Oil	0.13	0.00	1.00	6.48	1.00	1.00
Gas	0.87	1.00	0.00	-5.48	0.00	0.00
Exploration and mining support services						
Oil	0.95	1.00	0.00	1.00	0.90	0.61
Omn	0.03	0.00	0.67	0.00	0.07	0.39
Coa	0.02	0.00	0.33	0.00	0.03	0.00
Meat and meat product manufacturing						
Meat	0.71	0.48	1.00	0.48	0.49	1.00
ShGRBeDa	0.02	0.00	0.00	0.05	0.00	0.00
Oap	0.02	0.00	0.00	0.00	0.05	0.00
Ome	0.25	0.52	0.00	0.47	0.46	0.00
Agriculture, forestry and fishing support services						
Frs	0.57	0.88	0.29	0.00	0.00	1.00
Fsh	0.07	0.00	0.36	0.00	0.00	0.00
ShGRBeDa	0.14	0.10	0.21	0.00	0.01	0.00
OtAg	0.22	0.02	0.14	1.00	0.98	0.00

^athis column represents the average weight across all intermediate uses.

Table 5. IOPG product to SSET concordance

<i>IOPG product</i>	<i>SSET sector</i>
Sheep, grains, beef and dairy cattle	ShGRBeDa
Poultry and other livestock	Oap
Other agriculture	OtAg
Aquaculture	Fsh
Forestry and logging	Frs
Fishing hunting and trapping	Fsh
Agriculture, forestry and fishing support services	Frs
	Fsh
	ShGRBeDa
	OtAg
Coal mining	Coa
Oil and gas extraction	Oil
	Gas
Iron ore mining	Omn
Nonferrous metal ore mining	Omn
Nonmetallic mineral mining	Omn
Exploration and mining support services	Omn
	Coa
	Oil
	Gas
Meat and meat product manufacturing	Meat
	ShGRBeDa
	Oap
	Ome
Processed seafood manufacturing	Ofd
Dairy product manufacturing	Mil
Fruit and vegetable product manufacturing	Ofd
Oils and fats manufacturing	Vol
Grain mill and cereal product manufacturing	Ofd
Bakery product manufacturing	Ofd
Sugar and confectionary manufacturing	Sgr
Other food product manufacturing	Ofd
Soft drinks, cordials and syrup manufacturing	B_t
Beer manufacturing	B_t
Wine, spirits and tobacco	B_t
Textile manufacturing	Tex
Knitted product manufacturing	Tex
	Wap
Clothing manufacturing	Wap
Footwear manufacturing	Wap
Sawmill product manufacturing	Lum
Other wood product manufacturing	Lum
Pulp, paper and paperboard manufacturing	Ppp
Paper stationary and other converted paper product	Ppp

<i>IOPG product</i>	<i>SSET sector</i>
Printing (including the reproduction of recorded media)	Ppp
Human pharmaceutical and medical product manufacturing	Ome
Veterinary pharmaceutical and medical product manufacturing	Ofd
	Crp
Basic chemical manufacturing	Crp
Cleaning compounds and toiletry preparation manufacturing	Crp
Polymer product manufacturing	Crp
Natural rubber product manufacturing	Crp
Glass and glass product manufacturing	Nmm
Ceramic product manufacturing	Nmm
Cement, lime and ready mix concrete manufacturing	Nmm
Plaster and concrete product manufacturing	Nmm
Other nonmetallic mineral product manufacturing	Nmm
Iron and steel manufacturing	I_s
Basic non-ferrous metal manufacturing	Nfm
Forged iron and steel product manufacturing	I_s
Structural metal product manufacturing	Fmp
Structural metal product manufacturing	Fmp
Metal containers and other sheet metal product manufacturing	Fmp
Other fabricated metal product manufacturing	Fmp
Motor vehicles and parts; other transport equipment manufacturing	
	Otn
Ships and boat manufacturing	Otn
Railway rolling stock manufacturing	Otn
Aircraft manufacturing	Otn
Professional, scientific, computer and electronic equipment	Ele
	Ome
Electrical equipment manufacturing	Ele
Domestic appliance manufacturing	Trd
	Ome
	Ele
Specialised and other machinery and equipment manufacture	Ome
Furniture manufacturing	Omf
Other manufactured products	Omf
Electricity generation	Ely
Electricity transmission, distribution, on selling and electricity market operation	Ely

<i>IOPG product</i>	<i>SSET sector</i>
Gas supply	Gdt
Residential building construction	Cns
Water supply, sewerage and drainage services	Wtr
Non-residential building construction	Cns
Heavy and civil engineering construction	Cns
Construction services	Cns
Wholesale trade	Trd
Retail trade	Trd
Accommodation	Trd
Food and beverage services	Trd
Road transport	Otp
Rail transport	Otp
Water, pipeline and other transport	Wtp
Air and space transport	Atp
Postal and courier pick-up and delivery service	Cmn
Transport support services and storage	Otp
Publishing	Ppp
Motion picture and sound recording	Ros
Broadcasting (except internet)	Ros
Internet service providers, internet publishing and broadcasting	Ros
Telecommunication services	Cmn
Library and other information services	Ros
Finance	Ofi
Insurance and superannuation funds	Isr
	Osg
Auxiliary finance and insurance services	Ofi
	Isr
Rental and hiring services (except real estate)	Obs
Ownership of dwellings	Dwe
Non-residential property operators and real estate services	Obs
Professional, scientific and technical services	Obs
Computer systems design and related services	Obs
Employment, travel agency and other administrative services	Obs
	Otp
Building cleaning, pest control and other support services	Obs
Public administration and regulatory services	Osg
Defence	Osg
Public order and safety	Osg
Primary and secondary education services (including pre-school and special schools)	Osg
Heritage, creative and performing arts	Ros
Sports and recreation	Ros

<i>IOPG product</i>	<i>SSET sector</i>
Technical, vocational and tertiary education services (including undergraduate and postgraduate)	Osg
Arts, sports, adult and other education services (including community education)	Osg
Arts, sports, adult and other education services (including community education)	Osg
Health care services	Osg
Residential care and social assistance services	Osg
Gambling	Ros
Automotive repair and maintenance	Trd
Other repair and maintenance	Trd
Personal services	Ros
Other services	Osg

Table 6. Mixed income

<i>SSET sector</i>	<i>Initial labour^a</i>	<i>Initial capital^b</i>	<i>Mixed income ratio x 100^c</i>	<i>Final labour</i>	<i>Final capital</i>
ShGRBeDa^d	2466.6	3083.85.2	34.0	5570.5	2036.6
OtAg^d	2310.67	4474.4	34.0	4976.6	2954.86
Oap	2508.2	3096.5	34.0	3653.6	2076.1
Fsh	480.9	501.9	34.0	651.4	331.5
Frs	761.3	745.2	34.0	1014.4	492.1
Oil	2572.3	12579.45	0.6	2643.0	12507.8
Coa	5031.9	15553.42	0.6	5120.6	15464.8
Gas	1023.6	7063.7	0.6	1063.8	7023.4
Omn	9250.8	36370.3	0.6	9458.1	36163.0
Meat	1709.4	947.91	-0.6	1703.5	953.8
Ome	5641.0	3394.0	-0.6	5619.9	3415.0
Vol	117.3	142.4	-0.6	116.5	143.3
Ofd	6389.5	3903.7	-0.6	6365.3	3927.9
Mil	1533.6	1095.3	-0.6	1526.8	1102.0
Sgr	1292.7	614.2	-0.6	1288.9	618.0
BT	2169.6	3999.2	-0.6	2144.8	4024.0
Tex	1014.7	990.7	-0.6	1008.5	996.8
Lea	51.3	105.4	-0.6	50.6	106.0
Wap	724.1	873.2	-0.6	718.7	878.6
Lum	2296.1	1384.0	-0.6	2287.5	1392.6
Ppp	8120.1	8635.1	-0.6	8066.5	8688.6
PC	1604.4	3120.0	-0.6	1585.1	3139.4
Cns	47954.9	46172.0	76.6	83313.4	10813.5
Crp	6268.9	5233.8	-0.6	6236.4	5266.2
Nmm	2755.0	1554.9	-0.6	2745.4	1564.6
IS	2400.3	1756.2	-0.6	2389.4	1767.2
Nfm	3485.9	5010.4	-0.6	3454.8	5041.4
Fmp	5928.9	3212.16	-0.6	5909.0	3232.1
Mvh	2542.2	1567.1	-0.6	2532.5	1576.8
Otn	2919.7	1285.8	-0.6	2911.8	1293.8
Ele	1553.4	965.6	-0.6	1547.5	971.6
Trd	93533.8	47969.8	54.8	119816.5	21687.1
Omf	1950.7	1180.5	-0.6	1943.3	1187.9
Ely	5239.6	10392.1	-5.2	4703.3	10928.3
Gdt	183.1	695.0	-5.2	147.2	730.9
Wtr	2186.0	4661.9	-5.2	1945.5	4902.4
Osg	169473.5	33681.3	8.6	172380.2	30774.6
Otp	41699.9	24338.8	12.2	44636.8	21371.9
Wtp	1360.0	1718.7	12.2	1569.5	1509.2
Atp	3533.1	2792.4	12.2	3873.5	2452.0
Ros	16617.4	12837.8	-1.8	16385.0	13070.2
Cmn	8260.5	14333.5	0.0	8260.5	14333.5
Ofi	44540.0	54205.5	11.1	50583.9	48161.1

SSET sector	Initial labour^a	Initial capital^b	Mixed income ratio x 100^c	Final labour	Final capital
Isr	8848.5	2956.8	11.1	9178.1	2627.1
Obs	83838.9	54112.7	9.8	89.142.0	48809.6
Dwe	0	93429.0	0	0	93429.0

^a equivalent to 'Compensation of employees' in the ABS domestic use table. ^b equivalent to 'Gross operating surplus and mixed income' in the ABS domestic use table. ^c equivalent to the labour component of mixed income to 'Gross operating surplus and mixed income' ratio. ^d the sum of final labour and final capital for ShGRBeDa and OtAg do not equal the sum of initial labour and initial capital due to omitted land factor payments.

Table 7. Land factor payments

SSET Sectors	Initial Labour^a	Initial Capital^b	Land ratio x 100^c	Final labour	Final capital	Land
ShGRBeDa	5570.5	6035.9	66.3	5570.5	2036.6	3999.4
OtAg	4976.6	5184.3	43.0	4976.6	2954.9	2229.4

^a equivalent to 'Compensation of employees' in the ABS domestic use table. ^b equivalent to 'Gross operating surplus and mixed income' in the ABS domestic use table. ^c equivalent to the land to capital ratio implicit in the MMRF database.