National accounts

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National accounts

Introduction

n Australia, there is a wide range of economic data available to analyse the performance of various components of the economy over time. For example, data are regularly published on the number of houses being built, the number of cars produced, whether employment is rising or falling, the composition of exports and imports and so on. While these and other statistical series are important in their own right, none of them in isolation can provide an overall picture of the state of the economy.

National accounts are designed to provide a systematic summary of national economic activity and have been developed to assist in the practical application of economic theory. At their summary level, the national income, expenditure and product accounts reflect the key economic flows of the Keynesian economic system: production, the distribution of incomes, consumption, saving and investment. At their more detailed level, they are designed to present a statistical picture of the structure of the economy and the detailed processes that make up domestic production and its distribution. The national accounts include many detailed classifications (for example, by industry, by purpose, by commodity, by State and Territory, and by asset type) relating to major economic aggregates.

The performance of the economy, as represented in national accounting measures such as growth in the national income or gross domestic product, is not an end in itself. Movements in gross domestic product at constant prices are an important measure of economic growth, but there is no single indicator which can describe all aspects of the well-being of a country's citizens.

There are significant aspects of the 'quality of life' which cannot be comprehended in a system of economic accounts, just as there are significant aspects of an individual's well-being which are not measured in the conventional concept (or any other concept) of that individual's income. Notwithstanding their limitations, especially in relation to uses for which they were never designed, the national accounts provide vital information for a range of important purposes. The system of national accounts also provides a framework or structure which can be, and has been, adapted and extended to facilitate the examination of other economic and social policy issues.

A detailed presentation of the concepts underlying the national accounts is provided in the ABS publication *Australian National Accounts: Concepts, Sources and Metbods* (5216.0).

The main output from the national accounts is a measure of the overall value of economic production in Australia in a given period, but without any double counting of the goods and services being produced. Many goods and services are bought by businesses for use in their own productive activities (for example, steel is bought by car manufacturers). If the value of all goods and services produced were simply added together there would be serious duplication because some goods and services would be added in several times at various stages of production. The overall measure of production, excluding double counting, is called gross domestic product, which is commonly referred to as 'GDP'. It is formally defined as:

the total market value of goods and services produced in Australia after deducting the cost of goods and services used up (intermediate consumption) in the process of production, but before deducting allowances for the consumption of fixed capital (depreciation).

Measurement of GDP

There are three ways of measuring GDP:

- The *income approacb*, which measures GDP by summing the incomes accruing from production (wages, salaries and supplements; gross operating surplus (profits); and indirect taxes less subsidies).
- The *expenditure approach*, which involves summing all final expenditures on goods and services (that is, those goods and services which are not processed any further), adding on the contribution of exports and deducting the value of imports. Final expenditures consist of final consumption expenditure, gross fixed capital expenditure and increase in stocks. Exports are included in GDP because they are part of Australian production even though they are sold to overseas purchasers. Imports are deducted because, although they are included in final expenditures (for example, when someone buys an imported video recorder its value is included as part of private final consumption expenditure) they are not part of Australian production.
- The production approach, which calculates GDP by taking the market value of goods and services produced by an industry (its gross output) and deducting the cost of goods and services used up by

the industry in the productive process (intermediate consumption) which leaves the 'value added' by the industry (also called its gross product). GDP is then obtained by summing the gross product of all industries.

In theory, the three approaches result in identical estimates of GDP. In practice, because of the need to use different data sources for each method, the value of GDP obtained from each approach differs. The ABS refers to the above three alternative estimates of GDP as GDP(I), GDP(E) and GDP(P), respectively.

A fourth measure, the simple average of these three, referred to as GDP(A), is the preferred estimate of economic growth for Australia when expressed in constant price terms. Using movements in GDP(A) has been shown to provide a smoother and more reliable indicator of turning points in the economy than do changes in any of the individual measures of GDP. Quarterly changes in the constant price trend of GDP(A) are considered by the ABS to be the best indicator of short-term growth. Constant price data are published for all four estimates in original, seasonally adjusted and trend terms (see *Constant price or 'real' GDP* below).

	(\$	million)		
Year	GDP(I)	GDP(E)	GDP(P)	GDP(A)
1962-63	127 162	127 297	127 630	127 363
1963–64	136 164	136 200	136 239	136 201
1964–65	145 787	144 831	145 931	145 516
1965-66	148 957	148 175	147 849	148 327
1966-67	158 753	158 398	157 089	158 080
1967–68	164 674	164 937	164 065	164 559
1968-69	179 162	178 982	179 278	179 141
1969–70	189 206	188 338	188 639	188 728
1970–71	198 279	198 467	196 790	197 845
1971–72	207 872	207 196	202 882	205 983
1972–73	215 868	214 453	209 317	213 213
1973–74	225 894	221 371	225 006	224 090
1974–75	230 163	226 723	228 647	228 511
1975–76	236 931	236 684	232 507	235 374
1976–77	243 792	243 963	241 157	242 971
1977–78	246 302	245 444	243 879	245 208
1978–79	260 023	261 276	255 828	259 042
<u>1979–80</u>	265 427	267 540	261 980	264 982

25.1 Gross domestic product at average 1989–90 prices (\$ million)

	(\$	i million)		
Year	GDP(I)	GDP(E)	GDP(P)	GDP(A)
1980-81	274 782	275 156	270 715	273 551
1981–82	281 042	284 110	281 323	282 158
1982–83	276 235	277 904	271 179	275 106
1983–84	293 003	293 065	284 701	290 256
1984–85	307 904	306 560	301 536	305 333
1985–86	319 925	320 205	313 032	317 721
1986–87	328 206	328 163	318 906	325 092
1987 –8 8	345 264	344 728	337 828	342 607
1988-89	360 045	354 999	358 067	357 704
198990	371 051	366 831	371 051	369 644
1990-91	367 639	364 532	366 507	366 226
199192	368 365	371 265	365 241	368 290
199293	380 036	382 803	376 476	379 772
1993-94	398 537	396 934	392 071	395 847

25.1 Gross domestic product at average 1989–90 prices — continued

Source: Australian National Accounts: National Income, Expenditure and Product (5204.0).

GDP(A) at average 1989–90 prices increased by 4.2% in 1993–94, following a rise of 3.1% in 1992–93. For some analytical purposes it is important to allow for the impact of population growth on movements in GDP. Annual growth in GDP(A) per capita has been about 1.0% to 1.8% lower than that for GDP(A) since 1971–72 and was negative in 1990–91 and 1991–92.



25.2 GDP(A) and GDP(A) per capita

Constant price or 'real' GDP

The expenditure approach to calculating GDP measures Australian production by summing the amounts spent by the final users on the goods and services produced. However, by itself this is not always a good measure of production, since the value of a particular good or service is affected by inflation.

For example, the national accounts may show that the amount spent on motor cars is 5% higher this year than it was last year. If the price of cars has increased by 5% over the last year, then the number of cars bought will not have changed — expenditure has risen only because the price of cars has risen.

For a lot of uses, it is necessary to know how much physical production (for example, the number of cars made) has changed, rather than just the current (or dollar) value of production. Constant price estimates are the way in which this is achieved. They provide a measure, in dollar values, which indicates changes in the actual quantity of items produced or purchased. Because of this, constant price estimates of GDP are often referred to as estimates of 'real' GDP.

In essence, estimates of GDP at constant prices involve finding indicators of price changes in the items included in the national accounts, and using these to remove the effects of inflation from the estimates of GDP. Constant price estimates are expressed in terms of the average prices prevailing in a selected base year (currently 1989-90). Some of the main indicators used in this process are the component series from the consumer price index, which measures changes over time in the price of a 'basket' of goods and services bought by households. Other price indexes produced by the ABS (such as the import price index) are also used extensively in compiling the constant price estimates.

Implicit price deflators

A by-product of the calculation of constant price estimates is the implicit price deflator (or IPD). An IPD is the price index obtained when a current price estimate is divided by the corresponding constant price estimate. The ABS publishes a time series of IPDs for each of the expenditure side aggregates (excluding increase in stocks) in the domestic production account.

IPDs calculated from the major national accounting aggregates such as gross national expenditure are widely used as a broader measure of inflation in the economy than that available from any of the individual price indexes published by the ABS. However, care has to be taken in the interpretation of IPDs as they do not compare the price of a constant basket of goods between any two periods except when comparing the base period with another period. Therefore, they reflect a combination of the effects of actual price changes and changes in the composition of the aggregate from which the deflator is derived. An alternative set of price indexes, based on the expenditure side of the domestic production account, is fixed-weighted price indexes for the major expenditure aggregates. They measure the change in price of the basket of goods and services included in GDP in the proportions measured in 1989-90.

National income, expenditure and product accounts

The Australian national income, expenditure and product accounts are compiled and published in some detail every quarter, in *Australian National Accounts: National Income, Expenditure and Product* (5206.0), and in greater detail once a year, in *Australian National Accounts: National Income, Expenditure and Product* (5204.0).

Domestic production account

The domestic production account indicates changes in Australian production over time. Table 25.4 shows that, in 'real' terms (that is, after the effects of inflation are removed from the dollar value of Australia's production), there was a fall in production during the 1990–91 financial year. However, the three years since the recession in 1990–91 have shown accelerating growth. Although growth in 1991–92 was relatively low (0.6%), it accelerated in 1992–93 to 3.1% and then to 4.2% in 1993–94.

The domestic production account can also be used to show changes in the share of income accruing to labour (that is, wages, salaries and supplements) compared with the share accruing to capital (that is, profits). Graphs 25.5 and 25.6 show how the shares of each of wages and profits (defined as the gross operating surplus of private corporate trading enterprises) to GDP(I) at factor cost have changed since 1962–63.

The highest recorded value of the wages share of GDP(I) at factor cost is 63.5% in 1974–75. The wages share has recovered slightly from its recent low value of 55.1% in 1988–89, but remains at a relatively low level compared with most of the 1970s and early 1980s.

The profits (GOS of private corporate trading enterprises) share of GDP(I) at factor cost was only 13.6% during the 1982–83 recession but recovered to around 17% by 1984–85, a level it broadly maintained until the 1990–91 recession, during which it fell to just over 16%. In 1993–94, this ratio was 16.6%.

account	
production	million)
Domestic	\$)
25.3	

					Five yearly						Annual
	1962-63	1967–68	1972-73	1977–78	1982-83	1988-89	1989-90	1990-91	1991–92	1992-93	1993-94
Final consumption expenditure											
Private	10 658	15 677	26 001	56 933	105 965	195 613	217 555	229 701	241 742	252 665	263 433
Government	1 995	3 711	6 357	17 272	32 474	56 741	61 620	66 753	71517	74 714	77 595
Private gross fixed capital expenditure	2 800	4 496	7 726	15 455	27 985	67 196	67 730	60 301	56 176	61 378	67 995
Public gross fixed capital expenditure	1 331	2 178	3 270	7 194	13 120	17 944	21 658	20 794	20 566	19 281	17 968
Increase in stocks	253	113	-270	-430	-2 437	3 571	4 924	-1 896	-1 943	292	1 053
Gross national expenditure	17 037	26 175	43 084	96 424	177 107	341 065	373 487	375 653	388 058	408 330	428 044
Exports of goods & services	2 483	3 559	1 017	14 236	25 540	55 449	60 981	66 249	70 024	76 466	82 170
Imports of goods & services	2 596	4 115	5 392	15 179	29 062	61 316	67 637	66 037	68 091	77 856	83 367
Gross domestic product (GDP(E))	16 924	25 619	44 709	95 481	173 585	335 198	366 831	375 865	389 991	406 940	426 847
Statistical discrepancy	8	-136	84	-173	-1 109	4 729	4 220	3 204	-3 033	-2 933	1 742
Wages, salaries & supplements Gross onerating sumbus	8 361	13 212	23 562	53 066	94 949	164 686	183 438	190 757	194 684	201 583	210 946
Trading enterprises	6 687	9 527	16 586	31 773	56 886	133 200	143 499	143 342	147 218	154 790	163 857
Total	6 850	9 812	17 125	32 686	58 021	134 036	143 156	143 581	147 899	156 809	166 581
Indirect taxes less subsidies	1 630	2 459	4 106	9 556	19 506	41 205	44 457	44 731	44 375	45 615	51 062
Gross domestic product (GDP(I))	16841	25 483	44 793	95 308	172 476	339 927	371 051	379 069	386 958	404 007	428 589
Source: Australian National Accounts: Nationa	al Income, Exper	nditure and Pn	oduct (5204.((c							

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(average 1989-90 prices)(a)	
prices	
constant	million)
at	€
production account	
Domestic	

					Five yearly						Annual
	1962–63	1967-68	1972-73	1977–78	1982-83	1988-89	1989-90	1990-91	1991–92	1992-93	1993-94
Final consumption expenditure											
Private	77 384	98 259	125 420	147 548	172 426	208 246	217 555	518 616	224 421	230 439	236 072
Government	17 814	26 621	31 283	41 399	47 430	59 531	61 620	63 464	65 326	66 689	68 489
Private gross fixed capital expenditure	21 303	30 474	40 338	40 570	46 294	70 958	67 730	59 795	56 063	59 631	64 911
Public gross fixed capital expenditure	10 300	14 205	16 206	18 057	19 185	18 927	21 658	20 345	20 013	18 479	17 318
Increase in stocks	1 439	525	-1 670	-1 140	-3 624	3 812	4 924	-1 379	-2 103	590	191
Gross national expenditure	129 845	170 821	211 985	246 547	281 807	361 474	373 487	360 841	363 720	375 828	387 551
Exports of goods & services	13 704	18 751	28 047	32 921	36 841	57 813	60 981	67 861	74 008	78 258	85 787
Imports of goods & services	15 456	23 431	25 482	34 070	40 865	64 288	67 637	64 170	66 463	71 283	76 404
Gross domestic product (GDP(E))	127 297	164 937	214 453	245 444	277 904	354 999	366 831	364 532	371 265	382 803	396 934
Statistical discrepancy	-135	-263	1 415	858	-1 669	5 046	4 220	3 107	-2 900	-2 767	1 603
Gross domestic product (GDP(I))	127 162	164 674	215 868	246 302	276 235	360 045	371 051	367 639	368 365	380 036	398 537
(a) Estimates prior to 1984-85 have been der	rived by linking	estimates for e	earlier base ye	ars to estimat	tes at average	1989-90 pric	ces.				

Source: Australian National Accounts: National Income, Expenditure and Product (5204.0).

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National income and outlay account

The national income and outlay account shows how much of the national income is spent on final consumption. That part of income which is not spent in this way is saving.

Household saving as a percentage of GDP(I) increased significantly between 1962–63 and 1974–75, but has fallen subsequently from its high of 9.8% in 1974–75 to 3.5% in 1993–94. General government saving fell for four consecutive years as a percentage of GDP(I) from 1988–89 to 1992–93, before rising to

-3.4% of GDP(I) in 1993–94. In current value terms it was \$14,600 million in 1993–94. Saving of corporate trading enterprises has been negative for 14 of the past 20 years. In 1993–94 it was 1.3% of GDP(I) (\$5,500 million in current value terms), the highest percentage level since 1971–72. Saving of financial enterprises was negative from 1981–82 to 1987–88, the only period for which this sector has recorded negative saving. In 1993–94, saving of financial enterprises was 0.3% of GDP(I) (\$1,200 million in current value terms).

account	
outlay	
come and	s million)
Vational ind	9
25.7	

					Five yearly						Annual
	1962–63	1967-68	1972-73	1977–78	1982-83	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94
Wages, salaries & supplements	8 361	13 212	23 562	53 066	94 949	164 686	183 438	190 757	194 684	201 583	210 946
Net operating surplus	4 709	6 493	11 276	18 345	30 220	82 767	87 250	85 353	88 135	94 116	101 496
Domestic factor incomes	13 070	19 705	34 838	71 411	125 169	247 453	270 688	276 110	282 819	295 699	312 442
Less net income paid overseas	233	343	550	1 210	3 579	13 597	17 428	17 616	15 424	13 634	14 178
Indirect taxes	1 738	2 680	4 572	10 848	22 686	45 817	49 056	50 469	50 299	52 008	57 451
Less subsidies	108	221	466	1 292	3 180	4 612	4 599	5 738	5 924	6 393	6 389
National income	14 467	21 821	38 394	79 757	141 096	275 061	297 717	303 225	311 770	327 680	349 326
Less net unrequited transfers to overseas	22	24	88	257	195	-2 173	-2 290	-2 395	-2 195	-685	-196
National disposable income	14 445	21 797	38 306	79 500	140 901	277 234	300 002	305 620	313 965	328 365	349 522
Final consumption expenditure											
Private	10 658	15 677	26 001	56 933	105 965	195 613	217 555	229 701	241 742	252 665	263 433
Government	1 995	3 711	6 357	17 272	32 474	56 741	61 620	66 753	71517	74 714	77 595
Saving	1 792	2 409	5 948	5 295	2 462	24 880	20 832	9 166	706	986	8 494
Disposal of income	14 445	21 797	38 306	79 500	140 901	277 234	300 007	305 620	313 965	328 365	349 522
Gross national product	16 608	25 140	44 243	94 098	168 897	326 330	353 623	361 453	371 534	390 373	414 411
Source: Australian National Accounts: National Inc	come, Expendi	ture and Proo	luct (5204.0).								



National capital account

The national capital account shows how the saving from the national income and outlay account is used to finance gross fixed capital expenditure. If, as is currently the case in Australia, the nation's saving is not sufficient to pay for all the capital equipment needed for Australian production, the shortfall must be borrowed from overseas. The amount borrowed from overseas is shown in the national capital account as a negative entry for net lending to overseas.



As a proportion of GDP(I), investment by corporate trading enterprises fell to very low levels during the 1970s and then rose to a peak of 12.5% in 1981–82. It has subsequently fallen fairly steadily to 8.7% in 1993–94. Household investment as a proportion of GDP(I) has fallen from 10.1% in 1988–89 to 8.5% in 1993–94. While general government investment as a proportion of GDP(I) peaked at 4.4% in 1975–76, it has fallen steadily since then and is now 2.1% of GDP(I).

account	
National capital	(\$ million)
25.10	

				ш.	ive yearly						Annual
	1962-63	1967–68	1972-73	1977-78	1982-83	1988-89	1989–90	1990-91	1991–92	1992-93	1993-94
Consumption of fixed capital	2 141	3 319	5 849	14 341	27 801	51 269	55 906	58 228	59 764	62 693	65 085
Saving											
Household	925	1 020	3 771	7 294	8 912	13 589	15811	15 053	14 020	13 197	15 169
General government surplus on current transactions	325	465	802	-1 116	-2 933	8 047	7 837	1 734	-11 270	-15 925	-14 649
Extraordinary insurance claims paid	ł	ł	Ι	I	200	I	654	ļ	ł	Ι	I
Other	542	924	1 375	-883	-3 717	3 244	-3 470	-7 621	-2 044	3 714	7 974
Finance of gross accumulation	3 933	5 728	11 797	19 636	30 263	76 149	76 738	67 394	60 470	63 679	73 579
Gross fixed capital expenditure											
Private	2 800	4 496	7 726	15 455	27 985	67 196	67 730	60 301	56 176	61 378	67 995
Public enterprises	666	1 143	1 615	3 695	8 495	10 379	13 029	12 009	11 752	10 082	9 054
General government	665	1 035	1 655	3 499	4 625	7 565	8 629	8 785	8 814	9 199	8 914
Increase in stocks											
Private non-farm	221	292	-108	-42	-2 218	3 228	1 767	-3 034	-1 639	186	1 288
Farm & public authorities	32	-179	-162	-388	-219	343	3 157	1 138	-304	106	-235
Statistical discrepancy	Ŕ	-136	8	-173	-1 109	4 729	4 220	3 204	-3 033	-2 933	1 742
Net lending to overseas	-368	-923	987	-2 410	-7 296	-17 291	-21 794	-15 009	-11 296	-14 339	-15 179
Gross accumulation	3 933	5 728	11 797	19 636	30 263	76 149	76 738	67 394	60 470	63 679	73 579

Source: Australian National Accounts: National Income, Expenditure and Product (5204.0).



The household sector has been a lender to the other sectors in the economy for all years except 1967-68 and 1988-89. As a proportion of GDP(I), lending by households in recent years has risen from -0.5% in 1988-89 to 2.0% in 1990-91 but declined to 0.5% in 1993-94. Borrowing (that is, negative net lending) by corporate trading enterprises has fluctuated significantly over the whole period from 1962-63 to 1993-94. However, as a proportion of GDP(I), borrowing by corporate trading enterprises has fallen in every year since 1989-90 to the extent that, in 1993-94, this sector has become a net lender. After being a net lender for the period 1987-88 to 1989-90, general government has returned to being a significant borrower over the past four years.

Overseas transactions account

The overseas transactions account is actually derived from the detailed balance of payments current account — see *Chapter 26*,

International accounts and trade. It shows Australia's exports and imports, incomes received by Australian residents from overseas, and incomes paid to overseas by Australian residents. The balance is net lending to overseas.

Australia has generally been a net borrower of capital from overseas. In the national accounts, this situation is reflected by a negative value for 'net lending to overseas'. Following a small number of years where Australia actually loaned money to overseas in the early 1960s and 1970s, net borrowing from overseas, expressed as a proportion of GDP(I), increased rapidly during the 1970s and has remained at relatively high levels since the early 1980s. Graph 25.13 shows this proportion since 1963–64.

is account	
transactior	million)
Overseas	-\$)
25.12	

2 2 1 0 mmmon											
					Tive yearly						Annual
	1962-63	1967–68	1972-73	1977-78	1982-83	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94
Imports of goods & services	2 596	4 115	5 392	15 179	29 062	61 316	67 637	66 037	68 091	77 856	83 367
Interest, dividends, etc. to overseas	290	428	827	1 531	4 619	15 497	20 353	20 996	18 938	17 166	17 070
Labour income to overseas	Ð	0	25	57	135	279	406	429	326	311	283
Unrequited transfers to overseas	128	240	471	863	1 515	2 037	2 228	2 316	2 389	2 434	2 624
Net lending to overseas	-368	-923	987	-2 410	-7 296	-17 291	-21 794	-15 009	-11 296	-14 339	-15 179
Use of current receipts	2 651	3 869	7 702	15 220	28 035	61 838	68 830	74 769	78 448	83 428	88 165
Exports of goods & services	2 483	3 559	7 017	14 236	25 540	55 449	60 981	66 249	70 024	76 466	82 170
Interest, dividends, etc. from overseas	58	85	278	301	937	1 954	2 811	3 227	3 385	3 346	2 664
Labour income from overseas	4	6	24	17	158	225	370	432	455	497	511
Extraordinary insurance claims from overseas	1	I	Ι	Ι	80	I	150	150	I	I	I
Unrequited transfers from overseas	106	216	383	606	1 320	4 210	4 518	4 711	4 584	3 119	2 820
Current receipts from overseas	2 651	3 869	7 702	15 220	28 035	61 838	68 830	74 769	78 448	83 428	88 165
Source: Australian National Accounts: National Income	e, Expenditure	e and Product	(5204.0).								



The importance of foreign trade to the Australian economy is illustrated by the following graph, which shows the ratios of exports and imports of goods and services to GDP(I) for the financial years 1963–64 to 1993–94. In 1993–94 the import ratio was 19.5% and the export ratio was 19.2%. For a detailed discussion about a wide range of balance of payments ratios refer to *Balance of Payments, Australia, 1993–94* (5303.0), pages 11 to 15.



25.14 Exports and Imports, Share of GDP(I)

State accounts

As well as Australia's national accounts, the ABS produces State accounts each quarter. These provide quarterly estimates of gross State product and State final demand. Gross State product is produced by summing the incomes generated in the production process (the income approach to measuring total production). State final demand is equal to the sum of private and government final consumption expenditure and gross fixed capital expenditure. Estimates of State final demand are available in both current and constant prices and experimental estimates of gross State product are being released each quarter. An important use of State accounts is to compare the performance of each State and Territory. The following graphs show gross State product, in current prices, per head of mean population for each State and Territory divided by the Australian value (GDP(I) per head of mean population) since 1980–81.

Gross State product per head of mean population in 1993–94 was above the national average in New South Wales, Victoria, Western Australia, the Northern Territory and the Australian Capital Territory. GSP per head of mean population has been below the national average for the whole length of the time series (that is, since 1980–81) in each of Queensland, South Australia and Tasmania.

The only States to experience a decline in this ratio in 1993–94 were Queensland, Tasmania and the Northern Territory.



25.15 Gross State product per capita (Aust. = 100.0)

The value of unpaid work

The value of unpaid work has traditionally been excluded from estimates of gross domestic product (GDP). As the title implies, unpaid work receives no payment as the majority of the services are produced in the household. Unlike paid work, the services emanating from unpaid work are not produced for the market, so there are no appropriate monetary prices to use in the valuation of these services. Accordingly, the System of National Accounts, 1993 (SNA) excludes the value of unpaid work from its definition of economic production, as it aims to measure only market activity and activity for which satisfactory near market values exist. Nevertheless there are valuation techniques which can place estimates of the value of unpaid work within a national accounting framework.

Unpaid work is broadly categorised into "unpaid household work" and "volunteer and community work". Unpaid household work includes the following household activities:

- food preparation and clean up;
- cleaning and tidying;
- laundry, ironing and clothes care;
- purchasing of goods and services;
- physical care of own and other children;
- playing with, teaching, minding children;
- garden, pool and pet care;
- home maintenance and car care;
- household management;
- travel associated with the above activities; and
- transporting household members.

Volunteer and community work includes the following activities:

- helping/caring for sick, frail or disabled relatives;
- helping/caring for sick, frail or disabled other persons;
- voluntary community activities;
- helping/doing favours for others; and

• associated travel.

The methodology for valuing unpaid work can be based on either the "output approach" or the "input approach". While the former would be preferred conceptually, the necessary data are not generally available, and so the input approach has been used to produce the Australian estimates. The ABS investigated a series of different valuation methods within this approach:

Market replacement cost

- individual replacement cost; and
- housekeeper replacement cost.

Opportunity cost

- gross opportunity cost; and
- net opportunity cost.

The output approach is considered to be the conceptually superior method because it adopts the same approach as that used to value market production and is therefore appropriate at the macro-economic level for comparisons with national accounting aggregates. However, the data requirements are enormous and at present, the ABS does not collect the necessary data to implement this methodology.

To date, the input approach is used by the majority of studies on the valuation of unpaid work. A key feature of this approach is that it is based on data collected by time use surveys. These surveys ask respondents to keep a diary recording every activity undertaken in the course of a day from which a profile of unpaid work, and other activities, can be established. The principal limitation of the methodology is that in measuring unpaid work by the time spent on each activity no account is taken of the productivity of the time used or of the quality of output achieved.

The ABS investigated the four alternative input valuation methods listed above to value unpaid work. It should be noted that there are no international standards specifying the most appropriate input method of valuing unpaid work. The ABS has opted for the *individual function replacement cost* method as its preferred method because it is less thoretically problematical than the other methods. Also, it is conceptually similar to the approach specified in the framework used in the Australian national accounts for valuing other non-market output.

In February 1990 the ABS published a set of experimental estimates of the value of unpaid work in Australia in 1986–87. Data from the Pilot Time Use survey of 1987, which was conducted in the Sydney Statistical Division, were used as a basis for the estimates. During 1992, the ABS conducted a more comprehensive time use survey throughout Australia which enabled the initial experimental estimates to be extended and refined. A new set of estimates was published in September 1994 which was also used, albeit with several caveats, to make some comparisons with the 1986–87 results.

	Value
Type of activity (\$m)	
Domestic activities, child care & purchasing goods & services	209.7
Volunteer & community work	18.1
Total unpaid work	227.8
Female contribution (%)	65
Ratio of value of total unpaid work to gross domestic product	58
(a) Based on the Individual Function Replacement Cost method.	

25.16 Value of unpaid work(a)

Source: Unpaid Work and the Australian Economy (5240.0).

Using the *individual function replacement cost* method, table 1 shows that the value of total unpaid work in Australia for 1992 is estimated to be \$227,800 million, which is about 58% of gross domestic product as measured in the Australian national accounts. There was an increase in the share of volunteer and community work from around 5% to 6% of the value of total unpaid work in 1986–87 to about 8% in 1992.

Females were the main contributors to unpaid work. They were estimated to contribute 65% of total unpaid work in 1992, compared with 68% in 1986–87. However, males and females contributed almost equally to the volunteer and community work component in 1992, as was the case in 1986–87.

Table 25.17 below shows that the percentage share of unpaid household work spent on each activity varies across the various demographic categories. For instance, it shows that the main activities of females are food preparation, child care and housework, and, especially for unmarried females, shopping. Food preparation is also a significant activity for unmarried males, although less so than for unmarried females. The other main activities for males are shopping, home maintenance, car care and gardening.

				Female				Male	
		Married	No	t married		Married	No	t married	
Activity	Employed	U/ NILF(a)	Employed	U/ NILF(a)	Employed	U/ NILF(a)	Employed	U/ NILF(a)	TOTAL
Food & drink preparation & clean-up	22.2	26.3	19.8	24.4	13.7	13.8	18.4	23.6	21.1
Laundry, ironing & clothes care	12.0	11.1	8.2	9.1	1.9	1.7	5.8	5.0	8.0
Other housework	13.5	14.3	12.2	15.6	4.4	5.9	7.7	8.9	11.2
Gardening, lawn care & pool care	3.9	5.0	2.8	6.9	13.9	21.8	7.2	9.1	8.2
Pet, animal care	12.4	2.3	4.3	4.3	3.4	4.2	5.0	5.4	3.3
Home maintenance, improvement & car care	1.7	1.2	3.1	1.7	16.9	16.1	11.2	10.7	6.3
Household paper work, bills etc.	3.5	2.8	5.0	3.8	5.9	5.9	6.9	4.3	4.3
Transport & associated travel	4.6	2.6	2.9	2.0	5.2	3.9	2.1	2.2	3.4
Child care	17.3	17.6	8.2	11.5	14.3	5.2	2.3	1.9	13.4
Purchasing & associated travel	8.9	16.8	33.5	20.7	20.4	21.5	33.4	28.9	20.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

25.17 Percentage share of unpaid household work spent in each activity by statu

(a) Unemployed or not in the labour force.

Source: Unpaid Work and the Australian Economy (5240.0).

Table 25.18 below provides some international comparisons of estimates of unpaid work as a percentage of GDP. The Australian estimates represent a higher proportion of GDP than those for other countries included in the comparison. This reflects, in part, methodological differences as well as differences in social, cultural, climatic and economic conditions prevailing in various countries. A more detailed set of results and a comprehensive description of the concepts underlying the estimates of unpaid work are provided in Occasional Paper: Unpaid Work and the Australian Economy, 1992 (5240.0).

25.18 International comparisons of estimates of unpaid

	work	
Country and year of study	Reference Year	% of GDP or GNP
Australia		
1990	1986-87	52(GDP)(a) & 57(GDP)(b)
1994	1992	58(GDP)
Canada		
1978	1971	40(GDP)
1994	1992	41(GDP)
New Zealand		
1991	1991	52(GDP)
Norway		
1989	1981	39(GDP)
USA		
1982	1976	44(GNP)

(a) Award wage rate. (b) Adjusted award wage rate.

Source: Unpaid Work and the Australian Economy (5240.0).

Input-output tables

Basic structure

Input-output tables show the structure of a country's entire production system for a particular period, usually one year. They show which goods and services are produced by each industry and how they are used (for example, some goods, such as cars, are sold to final consumers while others, such as steel. are used as inputs by other industries in producing more goods and services). The tables are based on the principle that the value of the output of each industry can be expressed as the sum of the values of all the inputs to that industry plus any profits made. All the goods and services produced in a period are identified as being used as inputs by industries in their production process, being sold to final users of the goods and services (either in Australia, or overseas as exports), or contributing to the change in stocks (an increase in stocks if more goods are produced than purchased or a run-down in stocks if purchases exceed production). For the production system as a whole, the sum of all outputs must equal the sum of all inputs and for the economy as a whole, total supply must equal total demand (stocks provide the mechanism which balances supply and demand).

Relationship to the national income and expenditure accounts

Input-output tables can be directly related to the domestic production account. The income side of the domestic production account shows the amount of income generated in the economy accruing to labour (in the form of wages, salaries and supplements) and to capital (as profits or, in national accounting terms, 'gross operating surplus'). The expenditure side of the account shows the value of goods and services entering into the various categories of final demand.

The input-output tables provide a much more detailed disaggregation of the domestic production account than is available in the national income, expenditure and product accounts. The latter only supply details of the end results of economic activity, whereas the input-output tables provide a means of tracing flows of goods and services step by step through the production process. The extra detail provided by the input-output tables is essential for many analyses.

Further information

A table summary and diagram showing the flows of goods and services in respect of 1989–90 are presented in *Year Book Australia 1995*. Data in respect of 1992–93 will be published in the first half of 1996.

Financial accounts

In addition to the national accounts, the ABS produces quarterly information on the level of financial assets and liabilities of each institutional sector of the economy, the market for financial instruments and inter-sectoral transactions in financial assets and liabilities classified by financial instrument — see *Chapter 23, Financial institutions*.

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