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GST and the changing incidence of Australian Taxes: 1994-95 to 2001-02

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Abstract

The past decade has seen major reforms to the design of Australia's tax system. This paper outlines these reforms and examines their distributional impact across the household income spectrum.

While the authors estimated tax incidence in Australia prior to the July 2000 (ANTS) reforms (which included the introduction of a 10% GST), no comprehensive estimates of the impact of these tax reforms have been made since that date. This paper addresses this deficiency.

It finds that the personal income tax has become more income redistributive and more progressive over the period 1994-95 to 2001-02. However, the broad-based indirect tax reforms implemented over this period have become marginally more regressive and, because they have become more important as a revenue source, they now impact more adversely on post-tax income distribution. In the case of taxes other than the personal income tax and the reformed indirect taxes, they have become less regressive and have increased in importance. Overall, the progressivity of the Australian tax system and the distribution of post-tax income appears to have remained remarkably stable over the period.

INTRODUCTION

The past decade has been characterised by major changes to the Australian tax system.

Ultimately, in order to obtain a complete picture of the impact of government on its citizenry over a period of time, the impact of all aspects of government on the community would need to be considered.

It is to this end, that the authors are undertaking a series of studies into those elements that contribute to changes in fiscal incidence in Australia over the past decade. Harding, Lloyd and Warren (2004, 2005) examine the incidence in 2001-02 of the personal income tax, a limited range of Commonwealth indirect taxes, social welfare payments and a range of government social expenditures.

The purpose of this paper is to extend the tax component of the above studies and estimate changes in the incidence of almost *all* tax revenue raised in Australia between 1994-95 and 2001-02 for which we have sufficient data to simulate incidence. Initial attention is given to outlining the broad reforms introduced over this period (which are more fully outlined in Warren (2004)). No study of changing tax incidence can be undertaken without consideration of how these changes are impacted by economic, social and demographic changes over the period of study - and it will be to this issue that we turn in third section. The fourth section provides an overview of the methodology adopted. The fifth section examines the change in gross income distribution over the period studied. The sixth section presentturn in t

TABLE 2 TAX REVENUE: 1994-95 AND 2001-02

	1994–95	2001–02	Change	Reformed Indirect Taxes (as separately identified in this study)
	$m	$m		
Type of tax				
Taxes on income				
Income taxes levied on individuals	54,635	87,250	60%	
Income taxes levied on enterprises(a)	17,351	31,782	83%	
Income taxes levied on non-residents	777	-		
Total	72,763	119,032	64%	
Employers payroll taxes				
General taxes (payroll tax)	6,394	9,415	47%	
Selective payroll taxes (stevedoring industry charges)	64	-		
Other employers labour force taxes	2,687	3,760	40%	
Total	9,145	13,175	44%	
Taxes on property				
Taxes on immovable property	6,744	9,510	41%	
Taxes on financial and capital transactions				

Changes were also made to the method of calculating the excise on tobacco in July 1999 – moving from a weight-based system to one where the excise was determined on a per stick basis.

Business income tax reforms emanating from the RBT had an even bumpier ride than the GST with many reform proposals not finding their way through to implementation, especially the proposed entity taxation and Tax Value Method[283] (TVM) of calculating business income.

For States, tax reforms have been more limited and centre on those precipitated by the introduction of the GST such as the repeal of accommodation taxes, the Financial Institutions Duty (FID) and stamp duties on share transactions.

Personal Income Tax

The ANTS package of reforms was introduced in July 2000. The personal income tax changes over the period of study are detailed in Table 3. More significant cuts in the rates for those on high incomes were originally proposed in ANTS for introduction on 1 July 2000 but were substantially reduced when basic food was removed from the base of the GST (partly to fund this measure).

Lump sum compensation for the inflation induced wealth effects of the introduction of the GST for those in retirement was also provided[284] but these changes have not been modelled in this study.

TABLE 3 RECENT PERSONAL INCOME TAX REFORMS AND LOW INCOME REBATE[285]

1 November 1993 - 1 July 2000			1 July 2000 to 30 June 2003		
Personal Income Tax					
Taxable Income Range: Current Values	Upper Threshold Indexed: June 2005 values	Rate	Taxable Income Range: Current Values	Upper Threshold Indexed: June 2005 values	Rate
$0-$5,400	$7,234	0	$0-$6,000	$7,006	0
$5,401-$20,700	$27,732	20%	$6,001-$20,000	$23,355	17%
$20,701-$38,000	$50,909	34%	$20,001-$50,000	$58,387	

assets held by individuals for more than one year[286] - with the debate on this reform focussing on the level of the discount.[287] This meant that the effective maximum rate of taxation on capital gains became 24.25% (or 50% of the top marginal tax rate of 48.5%).

Goods and Services Tax

The economic incidence of any GST is ultimately designed to fall on domestic household consumers (and possibly overseas visitors). It is not intended to be borne either by foreign households or by domestic industry. Through its method of administration (via the invoice method[288] and the destinations principle[289]), the tax is ultimately borne by final domestic househol

retail value of luxury

were originally proposed for repeal were postponed for later review as a result of food being removed from the GST base[294]. It was expected that if all States received above the expected level of GST revenue, that by 1 July 2005 they would favourably consider repealing these taxes.

SOCIO-ECONOMIC AND DEMOGRAPHIC CHANGES

Understanding and interpreting intertemporal tax incidence results requires an appreciation of not just the nature of tax changes, but

TABLE 5 SELECTED INDICATORS OF THE CHANGING ECONOMIC, SOCIAL AND DEMOGRAPHIC SITUATION IN AUSTRALIA

	1994-95	2001-02	Change
Percent of population:			
0-14 years	21.5%	20.4%	-5.1%
65 years and above	11.8%	12.6%	6.8%

TABLE 7 HOUSEHOLD FINAL CONSUMPTION EXPENDITURE

						average
	$m		$m		%	change
Food	31,805	11.3%	44,955	10.6%	41.3%	-9.4%
Alcoholic beverages and tobacco	10,694	3.8%	18,006	4.2%	68.4%	17.6%
Clothing and footwear	12,394	4.4%	16,472	3.9%	32.9%	-17.9%
Rent and other dwelling services	51,819	18.4%	77,092	18.1%	48.8%	-2.0%
Electricity, gas and other fuel	5,961	2.1%	8,632	2.0%	44.8%	-5.9%
Furnishings and household equipme	17,270	6.1%	23,721	439439 179.79395 0872 612.80029 Tm(Tm( )Tj8.3948		

Data source

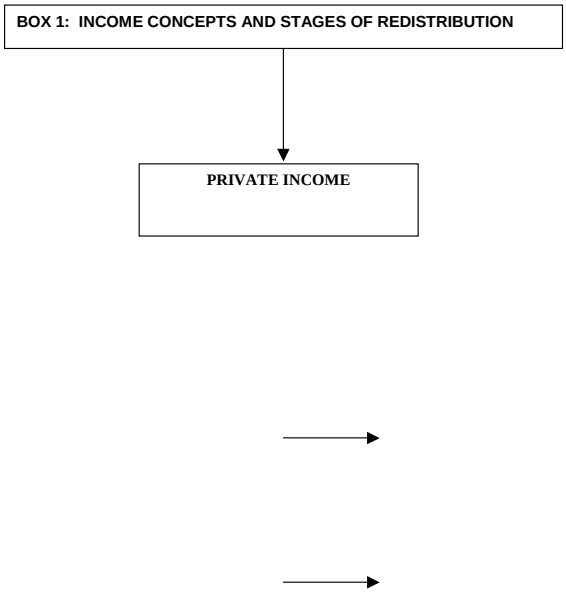
The core data sources used in the simulation of the 1994-95 world is the 1993-94 Household Expenditure Survey (HES) confidentialised unit record file released by the Australian Bureau of Statistics and for the 2001-02 world, the 1998-99 HES confidentialised unit record file. Ideally, access to post ANTS HES survey data would have been preferable, providing a more current insight into income and expenditure by Australian households in the post-ANTS tax environment. However, 1998-99 HES data are the latest data available.

These HES confidentialised unit record files contain a snapshot of the demographic, labour force, income and other characteristics of the Australian population in 1993-94 and 1998-99. It is important to note that the scope of the survey is restricted to those living in private dwellings and excludes those living in remote and sparsely settled areas. We made some adjustments to this file to update the private incomes and housing costs of households to estimated 1994-95 and 2001-02 levels, using such inflators as average weekly earnings and housing consumer price indexes. We also adjusted the population weights from 1993-94 to 1994-95, and from 1998-99 to 2001-02 levels, to allow for the aggregate growth in the population that occurs each year. We did not reweight the entire 1993-94 and 1998-99 surveys to account for possible changes in, for example, labour force and demographic status.

Taxes and cash transfers

In July 2000 Australia introduced a complex tax-mix shift towards indirect taxes, accompanied by extensive social security reforms. As a result, the declared values of these items in the 1998-99 Household Expenditure Survey were redundant. Accordingly, we had to impute the rules of the income tax and social security systems to estimate the income t

(Harding, Lloyd and Greenwell, 2001, and Saunders, 2001). The ABS has also used this income concept for ranking Australians in its latest Income Distribution Survey (ABS 2003).



Equivalent incomes

When attempting to compare the economic well-being of households of differing size and composition, it is important to use equivalence scales. For example, it would be expected that a household comprising four people would need more income than a

TAX INCIDENCE: 1994-95 AND 2001-02

The taxes imposed in Australia can be borne by both residents and non-residents depending on how the taxes are shifted. The shifting assumptions adopted in this study are detailed in Appendix B.

The resulting distribution of Australian taxes between residents and non-residents in the two periods of study is shown in Table 9. These incidence estimates are far from uncontroversial. There is a substantial debate that taxes which ultimately impact on exports such as the Payroll Tax or the petroleum excise, will in the case of a small open economy, impact not directly on non-residents but cause a devaluation in the Australian currency (the so-called purchasing power parity theory). This would force would

The impact of the substantial reforms to the method of imposing and collecting indirect taxes has seen the incidence of this tax fall slightly more on those in the lower deciles, with it impacting less on those at the top of the income distribution. This is in large part due to the broadening of the base of the GST which has meant a slight redistribution of the burden of broad based goods and services taxes more towards those on middle and lower incomes. Overall, however, the distribution of the tax burden appears to have remained remarkably stable over the seven years as shown by the marginal differences in the final two right hand column in the share of all taxes paid by each decile in 1994-95 and 2001-02.

TABLE 11 ESTIMATED AMOUNT AND SHARE OF AUSTRALIAN TAXES PAID BY DOMESTIC HOUSEHOLDS, BY DECILE OF EQUIVALENT GROSS INCOME: 1994-95 AND 2001-02

Decile of equivalent gross income	Personal Income T						All Taxes	
	1994-95	2001-02	1994-95	2001-02	1994-95	2001-02	1994-95	2001-02
$ per week								
1	$1.30	$1.60	$36.20	$52.70	$51.40	$67.60	$88.90	$121.90
2	$1.80	$3.40	$38.90	$55.70	$50.60	$67.40	$91.20	$126.50
3	$11.40	$19.90	$49.90	$70.20	$74.00	$96.40	$135.40	$186.60
4	$50.70	$69.30	$62.30	$88.70	$102.10	$125.80	$215.10	$283.80
5	$84.70	$119.20	$69.40	$100.10	$109.90	$150.00	$264.00	$369.40
6	$115.90	$159.20	$75.50	$107.60	$123.50	$170.00	$315.00	$436.70
7	$159.10	$219.00	$80.90	$119.60	$131.10	$186.40	$371.20	$525.10
8	$197.70	$283.10	$86.40	$119.90	$140.30	$197.90	$424.50	$600.90
9	$267.50	$365.20	$92.30	$134.90	$139.70	$229.00	$499.50	$729.10
10	$517.70	$760.20	$124.20	$166.20	$289.40	$379.10	$931.40	$1,305.40
All	$141.30	$200.70	$70.70	$100.00	$120.20	$165.40	$332.20	$466.00
Share by Decile								
1	0.1%	0.1%	6.9%	7.2%	5.7%	5.6%	3.6%	3.6%
2	0.1%	0.2%	6.2%	6.1%	4.7%	4.5%	3.1%	3.0%
3	0.8%	1.0%	7.0%	7.0%	6.1%	5.8%	4.0%	4.0%
4	2.9%	2.9%	7.2%	7.5%	6.9%	6.4%	5.3%	5.2%
5	5.1%	5.0%	8.4%	8.4%	7.9%	7.6%	6.8%	6.6%
6	7.3%	7.0%	9.6%	9.6%	9.2%	9.1%	8.5%	8.3%
7	10.0%	9.7%	10.2%	10.6%	9.7%	10.0%	9.9%	10.0%
8	13.3%	13.1%	11.6%	11.2%	11.1%	11.1%	12.1%	12.0%
9	19.4%	18.7%	13.4%	13.9%	11.9%	14.2%	15.4%	16.1%
10	40.9%	42.3%	19.6%	18.6%	26.9%	25.6%	31.3%	31.3%
All	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

TABLE 12 AVERAGE EQUIVALENT ADULTS PER HOUSEHOLD

Decile of equivalent gross income	1994-95	2001-02	Percentage Change
1	1.39	1.38	-
2	1.		

PROGRESSIVITY AND INCOME REDISTRIBUTIVE EFFECT OF TAXATION

Another informative approach to understanding what has happened to the post-tax distribution of income over our period of study is to examine changes in vertical equity in the tax system using single number indicators rather than a tabular approach. The most commonly used approaches here are through the use of concentration indexes (such as when estimating the Gini Indices), the Theil Index and the Atkinson Inequality Index

This lack of any significant aggregate change in overall post-tax income inequality (as shown by G*-G in Table 13) masks a change in the impact of different taxes on income distribution. The reformed indirect taxes acted to worsen income distribution but this effect was overwhelmed by an improvement in the impact of the personal income tax and a fall in the adverse impact of "other taxes" on income inequality. The primary contributor to this change was unquestionably the personal income tax.

Put more starkly, the impact of the progressive personal income tax and 'other' taxes has acted to offset the worsening distribution of the now much more important new reformed indirect taxes. This is despite the personal income tax cuts in July 2000. It her' taxes

Table 13 details the impact of the tax changes over the period 1994-95 to 2001-02 on the progressivity of the different tax groups.

As noted above, the changing impact of tax on the distribution of income arises from two sources, the height of the tax (as reflected in a_i) and the distribution of the tax (as shown in P). Changes in either will cause changes in G*. Table 13 provides estimates of changes in the progressivity of Australian taxes over the period of study. In the case of the personal income tax, its progressivity has increased, as has its average tax rate, which has resulted the income tax being more redistributive.

In the case of the reformed indirect taxes, they are both9948 Tm(se o)Tj11.0177 0 ta e1 0 31779

CONCLUSIONS

This paper focuses on changes in the level and distribution of the tax burden over the period 1994-95 to 2001-02.

What this paper has shown is that over a period of major economic and social change and significant tax reform - including the introduction of a 10% GST - the post-tax distribution of income in Australia has remained remarkably little changed.

Our analysis suggests that the magnitude

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APPENDIX A: METHODOLOGY

Core data sources

2001-02

The core data source used in the simulation of the 2001-02 world was the 1998-99 Household Expenditure Survey (HES) unit record file released by the Australian Bureau of Statistics. This file contains a snapshot of the demographic, labour force, income and other characteristics of the Australian population in 1998-99. It is important to note that the scope of the survey is restricted to those living in private dwellings and excludes those living in remote and sparsely settled areas. While it is likely that there were some minor demographic and labour market changes between 1998-99 and the target year of 2001-02, such changes were considered likely to have a negligible effect on the results. However, over three years the size of the population increased substantially over the three years and, accordingly, the original ABS weights were inflated the p

In both years, no attempt was made to adjust recorded HES income or expenditure amounts for likely under-reporting (e.g. of dividend income and cigarette expenditure).

Social security and family payments

The original ABS values for social security and family payments shown on the HES were not used in the study. They were replaced by the imputed cash transfers received by each household, estimated using NATSEM's STINMOD model.

2001-02

The social security and family payments systems simulated were those applying in 2001-02. Accordingly, the study captures the many changes in the cash transfer system introduced as part of the GST tax reform package in July 2000.

1994-95

The social security and family payments systems simulated were those applying in 1994-95. The benefits were scaled so that 92.4% of total spending on government cash payments (as given by FACS Annual Report) was allocated to households, in line with aggregate cash payments allocated in 2001-02.

Income tax and rebates

2001-02

The estimated amount of income tax paid by each household in 2001-02 was also simulated, using NATSEM's STINMOD model. Other major income tax provisions were also simulated, such as the Medicare levy, the low income tax offset and the pensioner and beneficiary r

Step 3 estimates how the 2001-02 taxes that are estimated to fall on Australian resident households in Step 2 ultimately impact on the individual households as reported in the HES unit record data. This is done by estimating the effective indirect tax rates on the 107 Input-Output commodity classification and linking this classification to the commodity classification adopted in HES.

The ultimate output is a series of effective indirect tax rates that can be applied to the HES unit record data for 2001-02, enabling an estimation of the indirect tax burden for each household in the HES data.

One issue warranting clarification is the indirect taxes modelled. This is important because in any compar

APPENDIX B: TAX SHIFTING ASSUMPTIONS

Table A.1 details the basic tax shifting assumptions adopted in the results reported in the body of this paper. The allocation of taxes to domestic households is a three stage process.

1 The allocation to 7 final consumers, of those taxes whose statutory incidence (who initially (or legally) pay the tax) is producers. These final consumers comprise domestic households, the government, industry and foreigners (Section A in Table B.1)
2 The allocation of the tax estimated to be incurred by these final consumers to domestic households (Section B in Table B.1)
3 The allocation of those taxes whose statutory incidence is on the domestic household sector to the domestic household sector (Section C in Table B.1)

Of those taxes incident on dividends paid by corporation operating in Australia, a proportion equal to the level of foreign ownership of incorporated enterprises in Australia are allocated to foreign households.

It has also assumed that while only persons in private dwellings were included in the households expenditure surveys, the composition of the included groups was not dramatically different from that of the population as a whole.

- PCEDIS allocated to households on the basis of their expenditure on a range of specific commodities
- TOTPCE allocated to households on the basis of their total consumption expenditure
- TOTINC allocated to households on the basis of their share in the burden of all taxes
- PCEINV allocated to households on the basis of their consumption of the goods produced in industries undertaking private investment
- PCEPUB allocated to households on the basis of their consumption of goods by public enterprises
- PCERAH allocated to households on the basis of their consumption of goods in which government invests
- FOREIGN taxes allocated to foreign households
- BUSINC allocated to households on the basis of their business income
- DIVIDEND allocated to households on the basis of dividend receipts
-

TABLE B.1 TAX SHIFTING ASSUMPTIONS

	PFCE	DIVIDENDS	BUSINESS INCOME	WAGES	TOTAL
A. Shifting of Taxes whose Statutory Incidence is on Producers					
TAXES ON INTERMEDIATE INPUTS					
1 COMPANY TAX	0.5	0.5	0	0	1
Commodity Taxes (taxes on commodity inputs)					
2 RST/GST	1.0	0	0	0	1
3 WHOLESALE SALES TAX	1.0	0	0	0	1
4 EXCISE-CRUDE OIL LEVY	1.0	0	0	0	1
5 -PETROL	1.0	0	0	0	1
6 -TOBACCO	1.0	0	0	0	1
7 -ALCOHOL - BEER	1.0	0	0	0	1
8 - OTHER	1.0	0	0	0	1
9 FRANCHISE- BEER	1.0	0	0	0	1
10 - OTHER ALCOHOL	1.0	0	0	0	1
11 - PETROL	1.0	0	0	0	1
12 - TOBACCO	1.0	0	0	0	1
13 PRIMARY PRODUCTION	0.5	0	0.5	0	1
14 GAMBLING TAXES	1.0	0	0	0	1
15 MOTOR VEHCILE TAXES	1.0	0	0	0	1
16 STAMP DUTIES	1.0	0	0	0	1
17 OTHER COMMODITY TAXES	1.0	0	0	0	1
18 FID	1.0	0	0	0	1
19 ---	1.0	0	0	0	1
20 ---	1.0	0	0	0	1
21 SUBSIDIES	0	0	1.0	0	1
Indirect Taxes (taxes on the carrying on of business)					
22 PAYROLL TAX	1.0	0	0	0	1
23 RATES AND LAND TAX	1.0	0	0	0	1
24 PRIMARY PRODUCTION TAXES	0.5	0	0.5	0	1
25 GAMBLING TAXES	1.0	0	0	0	1
26 MOTOR VEHICLE TAXES	1.0	0	0	0	1
27 STAMP DUTIES	1.0	0	0	0	1
28 OTHER INDIRECT TAXES	1.0	0	0	0	1
29 FBT	1.0	0	0	0	1
30 LAND TAX	1.0	0	0		

B. Treatment of Taxes by Final Consumers when Shifted to Forward

FINAL DEMAND SECTOR SHIFTING OF TAXES

		PCEDIS	FOREIGN	DIVIDENDS	BUS INC	WAGES	TOTAL
1	Household Final Consumption Expenditure	1.0	0	0	0	0	1
		TOTPCE	TOTINC	TOTINC			
2	Household Government	0	0.75	0	0	0	1
		PCEINV		DIVIDENDS		WAGES	
3	GFKE Private	0.5	0	0.5	0	0	1
		PCEPUB	TOTINC	TOTINC		WAGES	
4	GFKE Govt Enterprises	1.0	0	0	0	0	1
		PCERAH		TOTPCE	TOTINC		
5	GFKE General Government	0.25	0	0	0.75	0	1
		PCEDIS	FOREIGN	DIVIDENDS	BUS		