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**Household Income, Consumption and Wealth:
Broader Frameworks, More Comprehensive and Coincident Measures,
and Analyses of Joint Distributions**

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Introduction

1 People's standard of living depends on the economic and social resources available to them to support their consumption of goods and services, and their participation in society. The characteristics and economic circumstances of people with the lowest resources, and with the greatest need, receive significant policy attention. As such, studies of personal and household economic wellbeing are often concerned with the extent of economic hardship and inequality in society and how it is changing over time.

2 The most extensive studies of economic wellbeing can be conducted when comprehensive data on all dimensions of economic resources (income, expenditure and wealth) are available. The Australian Bureau of Statistics (ABS) has progressively improved and expanded its measures and analyses of household economic wellbeing through more comprehensive measures of household income and through coincident measurement and analysis of household economic resources. This paper summarises recent data developments (Section 1) and recent analytical developments (Section 2) and shows how they collectively support and improve our understanding of people's economic circumstances.

Section 1: Recent data developments

3 Australian micro estimates for household income, expenditure and wealth are compiled from the Survey of Income and Housing (SIH) and the Household Expenditure Survey (HES). This section summarises developments over the last decade that have enhanced the range and quality of data available from these surveys (Part A) and that have been made to improve the measures of household income (Part B).

A. Enhancements to data sources

4 The SIH and HES collect information by personal interview from usual residents of private dwellings, excluding those in very remote areas, covering about 97% of the people living in Australia. The household survey data, collected from individual households, can be used to analyse the distribution of income and wealth across the population and to compare levels of income, expenditure and wealth between various population subgroups and over time. When the ABS conducts a HES it also undertakes a study of the effects of taxation (direct and indirect) and government expenditure on the distribution of income. The confidentialised unit record survey files released by the ABS are used extensively for modelling, analysis and monitoring the aggregate and the distributional impacts of changes in government programs.

5 Over the last decade, the ABS has enhanced the range and quality of data available from these surveys for analyses to better understand the economic circumstances of Australian households. Significantly, in 2003–04 the major changes introduced included:

- a larger SIH sample;
- an independent selection of dwellings rather than from a sub-sample of respondents in the Monthly Population Survey;
- computer aided personal interviewing;

- integrating the HES as a sub-sample of SIH; and
- the collection of a comprehensive range of assets and liabilities.

6 In 2009–10, there was also significant investment to expand the sample sizes of the SIH and the HES.

ABS Survey of Income and Housing

7 The SIH was conducted continuously from 1994–95 to 1997–98 and then in 1999–2000 (skipping a HES year in 1998–99), and 2000–01, in each case as a relatively small sub-sample survey of 7,000 households which were interviewed after they had completed their final (8th month) interview in the ABS Monthly Population Survey (MPS). In 2002–03 the sample was increased to 10,000 households, and in 2003–04 the SIH was decoupled from the MPS and conducted as a stand-alone independent sample. The SIH collects demographic information for all household members, dwelling characteristics, and detailed information about the income, assets and liabilities, of persons aged 15 years and over.

8 In 2003–04, the SIH was integrated with the HES for the first time. The SIH is now conducted every two years and is integrated with the HES every six years. SIH was collected in 2005–06 and 2007–08, and the HES was integrated with the SIH for the second time in 2009–10.

9 In 2009–10, the SIH sample was significantly increased to over 18,000 households. An extra 4,200 households located outside capital cities were added to better support reporting on government performance, particularly in relation to housing affordability outside capital cities, as well as an additional sample in SIH and HES of 3,000 metropolitan households whose main source of income was a government pension, benefit and / or allowance.

10 In respect of 2011–12, the SIH program has been further augmented with additional sample and content to be collected to enumerate the ABS Household Energy Consumption Survey (HECS). This is the first time that the ABS has undertaken such a collection. The new information collected includes: household energy sources, use and costs; household energy efficiency characteristics; and energy efficiency actions and intentions. Respondents are asked to participate in a voluntary longitudinal follow-up collection for up to four calendar quarters and web forms are being offered as a reporting choice for this component. Respondents are also asked to report their unique national electricity meter number to facilitate matching with electricity volumes delivered to their dwelling.

11 The primary purpose of the collection of the energy consumption and expenditure information in conjunction with the detailed household composition and financial information from the SIH is to inform governments and the community about the differing energy consumption and behaviour patterns of Australian households. It will support analysis of issues such as energy poverty, and the assessment of the impact of changing energy costs on households generally, including low income households and those on government pensions and benefits. The principal users of this information will be government and other social and economic analysts involved in the development, implementation and evaluation of policies associated with changing energy prices and consumption levels.

ABS Household Expenditure Survey

12 The HES has been conducted in 1974–75, 1975–76, 1984, 1988–89, 1993–94, 1998–99, 2003–04 and 2009–10 and collects household level expenditures, diarised detailed information about the expenditure of all persons aged 15 years and over in the

household, and deprivation and financial stress measures. The HES is currently conducted every six years and is integrated and included as a subsample of the SIH.

13 As noted in paragraph 9 the 2009–10 HES included an additional 3,000 metropolitan households whose main source of income was a government pension, benefits and / or allowance, increasing the HES sample from 6,957 in 2003–04 to 9,774 in 2009–10 (a 40% increase). The additional pensioner households were enumerated using a separate sample design, but the fully responding in-scope households from the sample were included in the final SIH and HES estimates.

14 The expansion of the HES sample was made to improve the quality of the Pensioner and Beneficiary Living Cost Index (PBLCI), which measures changes in the cost of living for pension and other government beneficiary households, and is used to index government payments to compensate for price increases. The sample increase was targeted at improving the PBLCI to make it more representative of the spending patterns of pensioners and other beneficiaries, and to provide for the analysis of the specific products that pensioners and other beneficiaries buy, to assess whether an expanded range of products needed to be priced when constructing the PBLCI. As well as providing the separate weights for the index for this sub-population, the increased sample has also supported more detailed analyses of the characteristics and economic circumstances of recipients of government pensions and allowances.

B. Improvements to measures of household income

15 The ABS has undertaken significant work in recent years to improve measures of household income. Since 2007–08, ABS income measures align with the international standards (International Conference of Labour Statisticians, 2004) with the exception of the following items excluded for practical reasons: production of household goods and services for own consumption or barter, unpaid domestic services, services from consumer durables and some minor transfers from other households. Services from owner-occupied dwellings (imputed rent) are shown separately from the main estimates, in line with international standards and user preferences.

16 The improvements to income measures introduced in 2007–08 include:

- the inclusion, in employment income, of all payments received by individuals as a result of their current or former involvement in paid employment. In addition to the regular and recurring cash receipts previously included, the revised income measures also include salary sacrificed income, non-cash benefits, bonuses, termination payments and payments for irregular overtime.
- interest paid on money borrowed to purchase shares or units in trusts is now netted off income earned from these sources when deriving income estimates.
- income earned as a silent partner in a partnership and some private trust income are now classified to investment income rather than unincorporated business income. The questions developed to effect this change also improved the reporting of income from these sources.
- lump sum workers' compensation receipts are now included.
- a wider range of data on financial support received from family members resident outside the household is now included. In addition to regular payments previously collected, financial support has been extended to include other forms of financial support, including goods and services received which were purchased by others e.g. rent, education, food, clothing, car registration and utilities. Capital transfers, such as the purchase of property or cars, are excluded.

17 Table 1 shows that implementation of the broader measure of income in 2007–08 resulted in an \$85 (5%) increase in mean weekly gross household income, compared to the previous definition. The additional inclusions affected 3.4m households in total (43%). Most of the impact was on employment income, which increased by \$89 per week on average. The inclusion of bonuses and non-cash employment benefits had the most impact (\$32 and \$43 per week respectively). The Gini coefficient for the revised income measure was 0.331, which is higher than that compiled on the former income basis (0.317), reflecting that most of the changes resulted in increased income at the higher end of the income distribution, i.e. the fourth and highest quintiles.

Table 1: Impact of improvements to income measures on weekly income, 2007-08

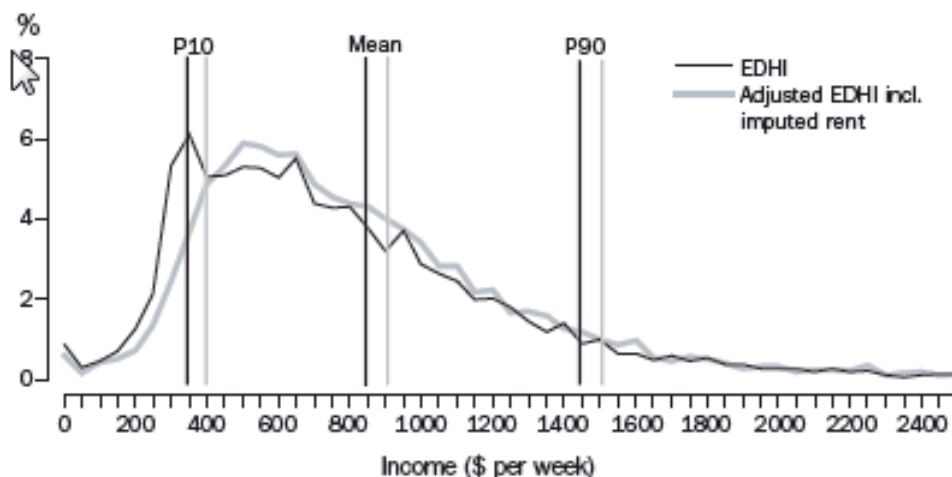
<i>Impact on estimates</i>	<i>Mean gross household income</i>	<i>Number of households impacted</i>	
	\$	'000	%
Employment income			
Non-cash benefits	43	1 627	20.1
Bonuses	32	1 467	18.2
Irregular overtime	9	1 493	18.5
Termination payments	5	389	4.8
Total	89	3 377	41.8
Other income			
Netting off interest from share / public unit trust income	-5	203	2.5
Lump-sum worker's compensation payments	1	23	0.3
Total	-4	225	2.8
Total change(a)	85	3 438	42.6
Overall total	1 649	8 077	100.0

(a) The impact of changes to questions on financial support from family members not living in the same household are not included in this table. A similar question relating only to regular, cash payments was asked in SIH 2005-06. As this income was included in the 2005-06 estimates, it is not being treated as a change to the 2007-08 estimates. When compared to 2005-06, the 2007-08 estimates reflect the broader coverage with a six-fold increase in the number of households reporting these transfer incomes. The mean weekly household income also increased, from \$4 in 2005-06 to \$15 in 2007-08.

18 In addition to the main estimates, the availability of imputed rent estimates, from 2003–04 onwards, allows the analysis of household income (and expenditures) to be extended to include the imputed rental incomes that flow to people living in homes owned by the occupants and to those households paying subsidised rent. Such imputations allow for more meaningful comparison of the income circumstances of people living in different tenure types, and to understand changes over time in income levels and the distribution of income when tenures may be changing over time. Adding net imputed rent to disposable income reduces the mean income differences between housing tenures, with a significant decline in the ratio between tenures with the highest and lowest incomes. Overall, for Australia, the

addition of net imputed rent to disposable income has a partial equalising effect as shown in the following frequency distribution graph (Figure 2). The P90 / P10 ratio falls significantly, as does the Gini coefficient.

Figure 2: Distribution of equivalised disposable household income (EDHI), with and without imputed rent, 2009-10



19 The ABS uses a hedonic regression model to estimate the market value of the rental equivalent of an owner-occupied dwelling. Data from the SIH on reported rents paid by private market renters is regressed on the characteristics of their rented dwellings e.g. location and dwelling structure. The estimated coefficients are then applied to the corresponding characteristics of owner-occupied and other dwellings to produce imputed values of the gross rental equivalence for these dwellings. Further details are available in ABS cat. no. 6525.0.

20 The effectiveness of imputation of the market value is dependent on the availability of data on price determining characteristics in the private rental market. The current imputation method does not use locational attributes such as views or beach frontage and proximity to employment, transport, shops and services, nor the market value of rented dwellings, nor some important physical characteristics such as outer-wall construction, availability of garaged or off-street parking, size of block or number of bathrooms. The ABS is currently exploring how house price data for residential property sales registered with the Land Title Offices in each state and territory could be integrated with locational information in the ABS Census of Population and Housing to better account for the diversity of housing markets in the SIH rent imputations.

Section 2: Recent analytical developments

21 This section outlines recent analytical developments and highlights how they are providing a more comprehensive understanding of the economic resources available to households and of household economic wellbeing. The section is divided into three parts: micro-macro data confrontations for household income, expenditure and wealth (Part A); methodological developments in the 2009–10 ABS fiscal incidence study (Part B); and coincident analysis of household income and wealth (Part C).

A. Micro-macro data confrontations for household income, expenditure and wealth

22 As part of the output from the 2009–10 SIH and HES, detailed data confrontations between the household income, expenditure and wealth estimates from these surveys and estimates from the Australian System of National Accounts (ASNA) were published as appendices in the ABS household income (cat no. 6523.0), expenditure (6530.0) and wealth (6554.0) publications for the years 2003–04 onwards. The ABS plans to routinely publish these confrontations with all future household economic resource survey releases.

23 The data confrontations expanded on the paper presented to the 2010 IARIW conference, 'Micro and macro economic estimates for Australian households: Recent developments and future directions'. Since then, a substantial body of work has been undertaken by the ABS to further understand the relationship between micro and macro estimates of household economic resources in Australia. The published results from this work are designed to help users understand the differences in scope, data sources and measures and to enable the distributional measures to be used more extensively in macro economic analysis.

24 The approach for each of the data confrontations was to describe the main scope, definitional and methodological differences between the two datasets. For each of the confrontations there were scope differences that could not be easily quantified. The SIH and HES exclude both people living in non-private dwellings and people living in very remote regions of Australia. It is estimated that this excludes approximately 3% of people living in Australia. The ASNA household sector estimates also include the activity of non-profit institutions serving households (NPISHs). While some activity of NPISHs can be quantified, other income, expenditure and wealth of NPISHs cannot be separately identified.

25 However, where quantifiable differences were identified, these adjustments were made to the household survey or ASNA estimates for the purpose of the comparisons. The net result of adjusting for the quantifiable differences, as shown in Table 3 and described further in the following text, is to bring the aggregate results closer together for each dimension of household economic resources.

Table 3: Comparison of SIH/HES and ASNA household sector estimates, 2009–10

		<i>Income</i>	<i>Expenditure</i>	<i>Wealth</i>
<i>Total household survey estimates (SIH / HES)</i>	\$b	781	569	6043
Less adjustments for scope and measurement differences	\$b	32	6	682
Adjusted survey estimates (SIH / HES)	\$b	749	562	5361
<i>Total ASNA estimates</i>	\$b	1081	698	5429
Less adjustments for scope and measurement differences	\$b	288	82	455
Adjusted ASNA estimates	\$b	793	616	4974
SIH/HES as a percent of ASNA, after adjusting for scope and measurement differences	%	94	92	108

Income

26 The main quantifiable difference was the inclusion of regular income payments received by households as superannuation, annuities or private pensions (\$22 billion) in SIH income measures. In the ASNA only the imputed income, such as from interest and dividends, earned by superannuation funds on behalf of their members is included as household income and the balance of drawdowns by households from such funds are recorded as capital withdrawals. The next largest difference is in regard to financial support received from persons not living in the household which is included in SIH (\$8 billion) without deduction for the households making the payments (they are regarded as expenditures). In the ASNA sectoral accounts transfers from one household to another within Australia's economic territory will generally net out.

27 The components in the ASNA income which are not measured on a gross basis in the SIH income measure include: employers' social contributions (\$69 billion), imputed interest (\$57 billion), non-life insurance claims (\$22 billion, included as negative expenditures in micro measures), government transfers to NPISHs (\$21 billion), imputed additional interest for financial intermediation services indirectly measured (FISIM) on interest received (\$14 billion, netted in SIH income measures) and social assistance benefits not collected in SIH (\$12 billion). There are also quantifiable differences in the measurement of income from housing and operations of unincorporated enterprises. In the SIH, a much broader range of housing and business expenses are deducted in calculating household level income, whereas in the ASNA the sectoral income measures are reported on a more gross basis. To better align to the SIH measurement, for 2009–10, \$93 billion of net expenses incurred in generating household incomes were deducted from the ASNA sector aggregate.

28 Wages and salaries were the largest component of household income, followed by social assistance benefits in cash. The SIH and ASNA estimates were closely aligned for both components of income (SIH measures were 99% and 87% of the respective ASNA estimates).

Expenditure

29 The largest quantifiable difference between the micro and macro measures of expenditure was for imputed rent for subsidised rentals which are not included in the expenditures attributed to the household sector in the ASNA (\$6 billion).

30 The ASNA household sector estimates of expenditure which are not separately reported in the micro estimates include: imputed service charges for life insurance and superannuation funds, imputed FISIM, and an imputed service charge for workers' compensation insurance (total \$53 billion), current expenditure of NPISHs (\$28 billion) and goods produced at home for own consumption (\$1 billion).

31 Where the macro and micro estimates are both reported, HES estimates of expenditure on selected household goods and services were slightly lower than the ASNA estimates for the same commodities (86% for good and 92% for services). On the other hand, HES estimates for housing rents (actual and imputed) were 107% of the ASNA estimate.

Wealth

32 The quantifiable differences for the micro (SIH) estimates of net worth (wealth) are the inclusion of the value of household contents and motor vehicles used for private purposes (\$682 billion). These are not included in the ASNA estimates of net worth in the household sector balance sheet, but consumer durables (\$265 billion) are included as a memorandum item in the *National Balance Sheet*. However, consumer durables in the ASNA exclude many household items such as clothing, jewellery and electronic equipment. Valuation methods also differ, with the ASNA estimating a current value, taking into account depreciation, whereas the SIH uses insurance cover which is normally based on a 'new for old' valuation basis.

33 The ASNA measure of net worth also includes some components which are not included in the scope of the SIH measure. The components which can be identified and deducted from the ASNA aggregate include: unfunded superannuation claims (\$203 billion), the technical reserves of general and life insurance corporations (\$93 billion), the capitalised costs of transfers of ownership on real estate transactions, such as stamp duties, legal fees and real estate agents' commissions (\$147 billion), and the bank deposit assets of NPISHs (\$12 billion).

34 The most important asset of the household sector is residential property. The SIH estimate of the value of residential property was 5% higher than the ASNA estimate in 2009–10. Superannuation is the most significant form of financial asset. In 2009–10, the value of superannuation assets reported in the SIH was 94% of the ASNA estimate, in part reflecting the ASNA inclusion of the superannuation assets of people in aged care institutions.

B. Methodological developments in the 2009–10 ABS Fiscal Incidence Study

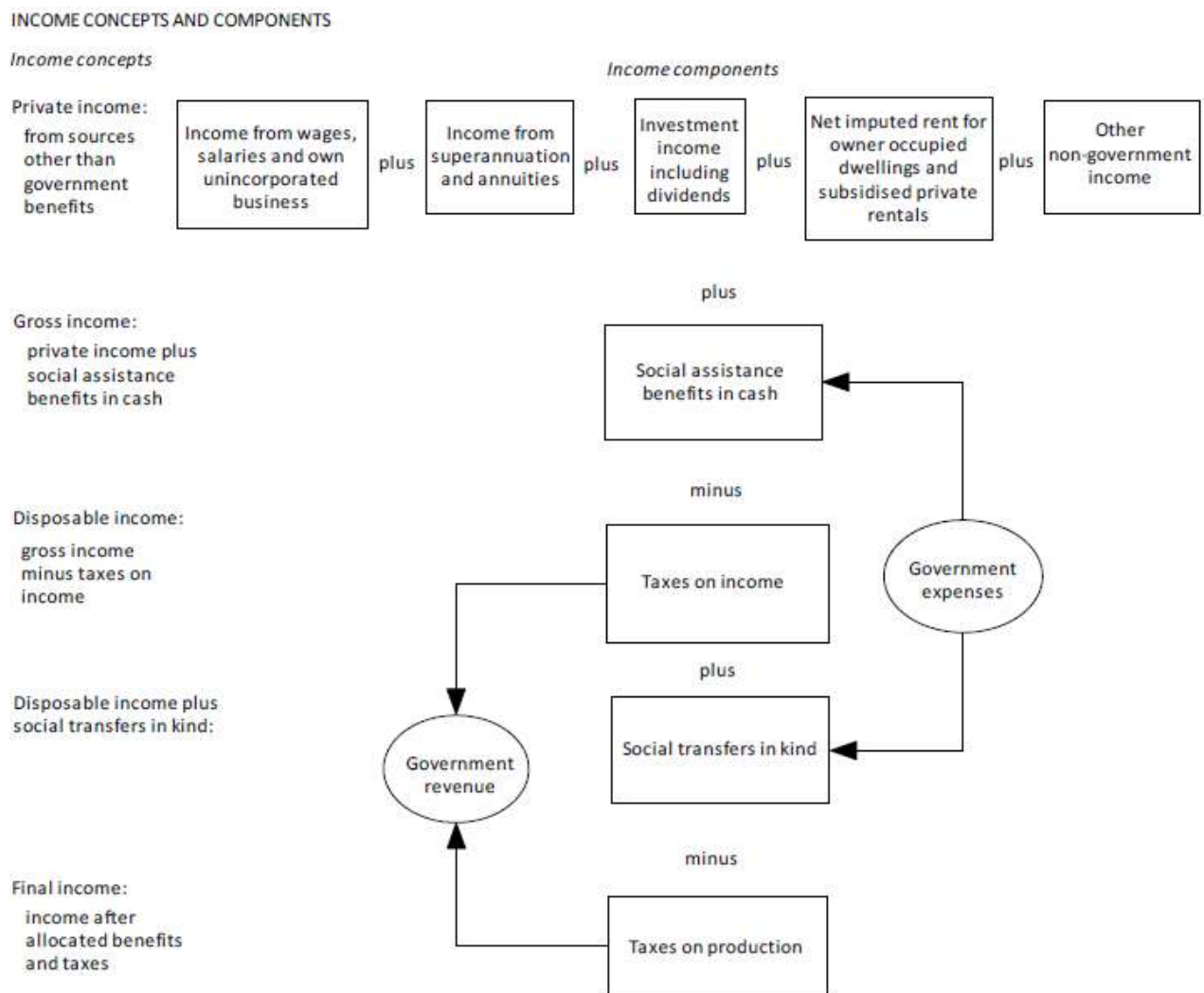
35 In June 2012, the ABS released the results of its 2009–10 fiscal incidence study (ABS cat. no. 6537.0). The study shows the effects of taxation and government expenditure on the distribution of income among private households in Australia in 2009–10. Previous studies were conducted in relation to 1984, 1988–89, 1993–94, 1998–99 and 2003–04. The 2009–10 study followed the methodology used in the significantly redeveloped 2003–04 study, but with the inclusion of net imputed rent for owner-occupied dwellings in measures of private income and with a number of improvements to the allocation of social transfers in kind for health benefits, housing benefits and child care concessions. Electricity concessions provided by State and territory governments to households were also included for the first time.

36 One of the major data sources used in the study is the HES. Therefore the study is currently undertaken every six years in conjunction with the HES. Other major data sources

used in this study are the ABS Government Finance Statistics (GFS) and Input-Output tables from the ASNA.

37 Figure 4 shows the relationship between the income measures and components of government benefits, taxes and income compiled in this study. Household income is increased directly by the Australian government through social assistance benefits in the form of cash payments, such as the age pension and family tax benefit, and indirectly by government expenditures such as those on health and education. On the other hand, household income is reduced by taxes on personal income (direct taxes) and by taxes on production (indirect taxes) passed on in the prices households pay for goods and services. Benefits and taxes included in the study were restricted to those that are relatable to particular types of households and to household expenditure. The study excludes taxes and expenditures not relatable to particular types of households such as government revenue from corporate taxes and spending on defence, public order and safety, transport and communications.

Figure 4: Income concepts and components



38 Estimates for private income, gross income and disposable income were compiled from either reported or modelled estimates routinely derived for the SIH and HES files. Most social assistance benefits in cash were received by those households with the lowest private income. On average, in 2009–10, households in the lowest equivalised private income quintile received \$435 per week and those in the second quintile received \$251 per week. By comparison, households in the highest income quintile received, on average, \$15 per week in social assistance benefits in cash. On the other hand, payment of taxes on income, increased with private income. Households in the lowest quintile paid 0.1% of total taxes on income while households in the highest income quintile paid 61%.

39 Estimates for social transfers in kind and taxes on production were modelled as part of the fiscal incidence study.

Social transfers in kind

40 Government social transfers in kind were imputed for the provision of education, health, housing, child care, electricity and other social security and welfare services. Information reported in the HES was used as the basis for allocating government social transfers in kind to households based on the composition of households and the characteristics of their members. In most cases, the total value of each social transfer in kind was based on the cost to government of the provision of those services as estimated in the GFS.

i. Education benefits

41 Social transfers in kind were allocated for school education, tertiary education and other education benefits. In the HES, attendance at educational institutions is collected for all members of households, both adults and children. This includes the type of institution attended, e.g. primary/secondary school or university as well as whether the institution is a public or private institution such as schools run by the Catholic church or other private organisations. Data on average expenditure by type of student are obtained from the government department responsible for education services. The value of education benefits received by members of individual households is allocated based on reported characteristics and summed to the household level.

42 Of the \$53.3 billion education expenditure available for allocation to households, \$51.8 billion (97%) was allocated to households. Average education benefits allocated to all households were valued at \$117 per week in 2009–10. Households in the second and third equivalised private income quintiles received higher average education benefits than the other quintiles, reflecting higher numbers of dependent children in those quintiles, on average.

ii. Health benefits

43 Health benefits were allocated for acute care institutions, community health services, pharmaceuticals, the Private Health Insurance Rebate (PHIR) and other health benefits. Other health benefits cover public health services, health research and health administration n.e.c. Except for the PHIR, these benefits were, in general, allocated to households according to an insurance premium approach. Instead of allocating benefits according to actual use of health services over a relatively short period of time (which implies that benefits increase with short term ill health), members of the HES population were allocated benefits according to the average utilisation rates for their age, sex, state or territory of residence groups. Additionally, for people with a disability or long term health condition, a higher utilisation rate was applied. This higher utilisation rate was estimated using data on the frequency of GP visits collected in the 2007–08 ABS National Health Survey.

44 The PHIR is a rebate on private health insurance costs for members of a registered health fund. The PHIR was allocated to households in the HES that recorded expenditure on private health insurance.

45 Of \$84.7 billion of health expenditure available for allocation to households, \$79.2 billion (94%) was allocated to households. Households in the lowest equivalised private income quintile were allocated higher average health benefits (\$233 per week) than the average for all households (\$181 per week) because a higher proportion of the people in these households were aged 65 years and over or had a disability. However, allocation of benefits for the PHIR increased as income increased, with households in the highest equivalised private income quintile receiving the most benefits (\$16 per week) compared to an average of \$5 per week for households in the lowest quintile.

iii. Housing benefits

46 Housing benefits were allocated to households in government rental accommodation according to the estimated value of rental subsidy that they received. The value of the subsidy was calculated as the difference between the estimated market rent for their dwelling if it were to be privately rented, less the actual rent paid by households. Almost all housing benefits allocated in the study were received by households in the lowest equivalised private household income quintile. In total, \$1.9 billion was allocated.

47 A substantial government expense for housing relates to the purchase of new dwellings for future subsidised rental. These expenses were not allocated amongst HES households since the study is focussed on social transfers in kind received during the reference period.

iv. Electricity concessions

48 All state and territory governments provide concessions or rebates on electricity bills to certain households, typically those receiving some government benefits or allowances, or holders of some concession cards. In this study, government expenses for electricity concessions were allocated to eligible households according to the value of the concession in their state or territory of residence.

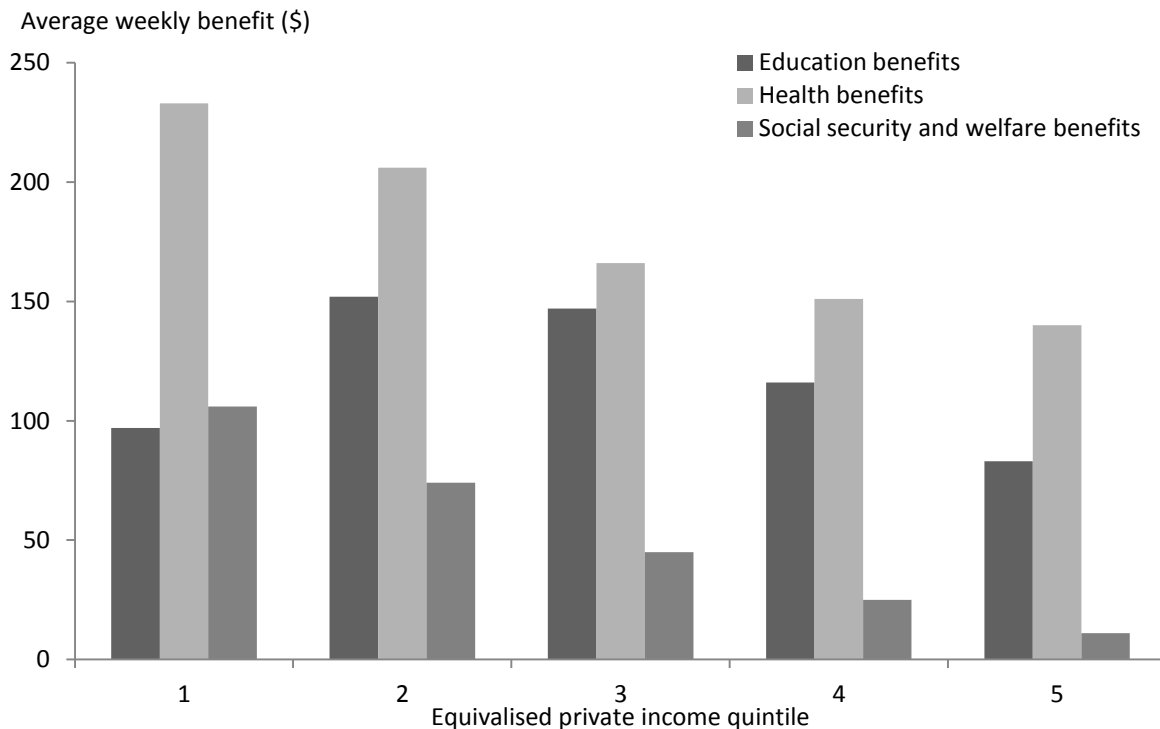
v. Social security and welfare benefits

49 Government benefits were allocated for child care assistance and for all other social security and welfare benefits. Child care assistance was modelled at the income unit level depending on the number of children in formal care, the reported hours of care and the relevant income thresholds and tapers that are applied.

50 Government expenses relating to other social security and welfare programs, other than expenditure on direct cash payments, child care and residential aged care, were allocated to persons who received social security and welfare benefits. Average social transfers in kind for different types of benefit recipients (such as family and child related recipients, age related recipients and disability support recipients) were calculated by dividing the GFS expenses for each category of expenditure by the number of recipients.

51 Of \$24.9 billion of child care and other social security and welfare expenditure available for allocation to households, \$23.6 billion (95%) was allocated to households. Allocation of child care assistance was highest for households in the third and fourth quintiles (both averaging \$10 per week). Households in the lowest equivalised private income quintile were allocated received the highest benefits for other social security and welfare benefits (\$102 per week) which compared to \$46 for the average for all households.

Figure 5: Selected social transfers in kind by equivalised private income quintile, 2009-10



Taxes on production

52 Taxes on production consist of *taxes on products* and *other taxes on production*. Total taxes on production are calculated net of any subsidies received from governments. In allocating the taxes on production, it is assumed that industries will pass the burden of the taxes on production they pay to the purchasing industries and/or final consumers through higher prices. Also, the burden of the tax will be passed from one industry to another until the total burden of the tax is passed on to a final demand sector, one of which is the household sector.

53 *Taxes on products* are taxes payable on goods and services when they are produced, delivered, sold, transferred or otherwise disposed of by their producers. They include goods and services tax (GST), taxes and duties on imports, and other taxes on products such as fuel and tobacco excise. *Other taxes on production* consist of all taxes except taxes on products that enterprises incur as a result of engaging in production. These taxes do not include any taxes on profits or other income received by the enterprise. They are taxes payable on the land, fixed assets or labour employed in the production process or on certain activities or transactions. Other taxes on production include taxes on payroll or workforce, land taxes, business and professional licences and stamp duties.

54 The amount of taxes on production paid by HES households was calculated as follows:

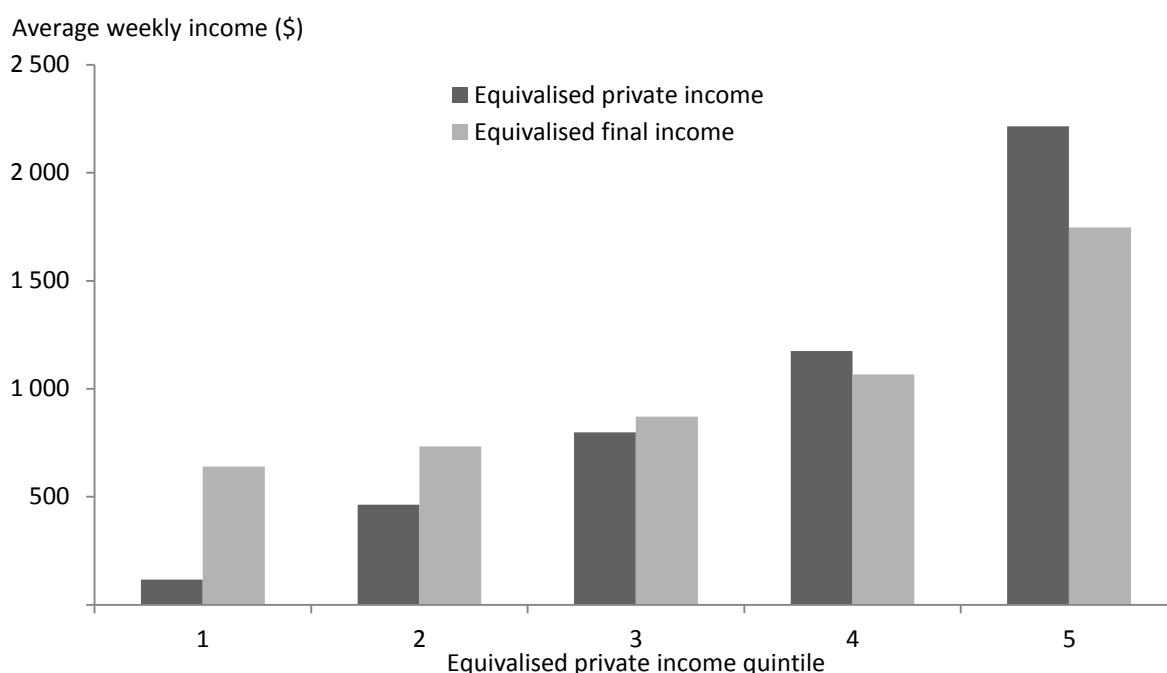
- the incidence of taxes on production to households was estimated using Input-Output tables from within the ASNA. The Input-Output tables present a comprehensive picture of the supply and use of goods and services in the economy and the income generated from production. They record the flows of products from one industry to another and to final demand for consumption. For this study, the 2007–08 Input-Output tables were used to calculate a tax rate for each of the 111 Input-Output product groups (IOPG)
- the Household Expenditure Classification (HEC) was used to classify household expenditure in the HES. The approximately 600 HEC codes were mapped to the 111 IOPG codes
- household expenditure classified to each HEC code was multiplied by the relevant tax rate to estimate the total final incidence of taxes on production for each household.

55 Taxes on production tend to increase with income, but to a lesser extent than for taxes on income. Households in the lowest quintile paid 14% of total taxes on production, while households in the highest quintile paid 31%.

Income redistribution

56 The government tax and transfer system in Australia is designed to assist those in the community who are most in need of financial support. The effects of different benefits and taxes vary with the level of household income. Low income households receive more social benefits in cash and social transfers in kind and pay less tax than high income households. Social assistance benefits in cash and social transfers in kind increase with household size and decrease as levels of household income rise. The net effect of benefits and taxes is to increase the average income of households in the lower income groups, and decrease the average income of households in the higher income groups, as shown in Figure 6.

Figure 6: Equivalised private and final income by equivalised private income quintile, 2009-10



57 The Gini coefficient is a single statistic that lies between 0 and 1 and is a summary indicator of the degree of inequality, with values closer to zero representing a lesser degree of inequality, and values closer to 1 represent greater inequality in the distribution of income. Table 7 shows that there is significantly less inequality in the distribution of equivalised final household income compared to equivalised disposable household income. Equivalised private household income is the most unequal.

58 Between 2003–04 and 2009–10, the distribution of household income became more unequal, particularly for disposable and final income, with the Gini coefficient for both increasing by almost 10% between the two periods. However, the effect of the tax and transfer system in reducing the level of inequality is marked – nearly halving the Gini coefficient observed for private incomes alone.

Table 7: Gini coefficient by equivalised income, 2003–04 and 2009–10 (a)

	2003–04	2009–10	Change from 2003–04 to 2009–10
	no.	no.	%
Equivalised private household income	0.432	0.442	2.3
Equivalised disposable household income	0.286	0.313	9.4
Equivalised final household income	0.224	0.245	9.4

(a) Net imputed rent is included in all income estimates as a component of private income

59 The results from the ABS fiscal incidence study are made available through the release of confidentialised unit record files. The files are used extensively by government and other social and economic analysts involved in the development, implementation and evaluation of social and economic policies, monitoring both the aggregate and distributional impact of such policies, especially for households within potentially disadvantaged members (such as pensioners, one-parent families and the unemployed). The data from the survey underlie much of the modelling undertaken in government and elsewhere in policy design and evaluation. The results also assist in planning services (health, housing, disability, child care, education, aged care, income support arrangements).

C. Coincident analysis of income and wealth to better understand economic wellbeing

60 The introduction of an expanded and comprehensive range of information about the assets and liabilities of each household from the 2003–04 SIH and HES onwards has enabled investigations of the relationships, at the household level, between income, wealth and expenditure, and analyses that provide a more complete picture of the economic wellbeing of Australian households.

61 People's material standard of living is reflected in their consumption of goods and services, such as for food, clothing, housing, transport, medical care, leisure activities and so on. Access to economic resources, i.e. household income and wealth, is key to understanding people's consumption possibilities. People living in households with low income or low wealth may have low consumption possibilities, i.e. have a relatively low material standard of living and be more at risk of experiencing economic hardship.

62 Most analyses of economic wellbeing are based on income data because it is frequently available. While income is an important determinant of economic wellbeing,

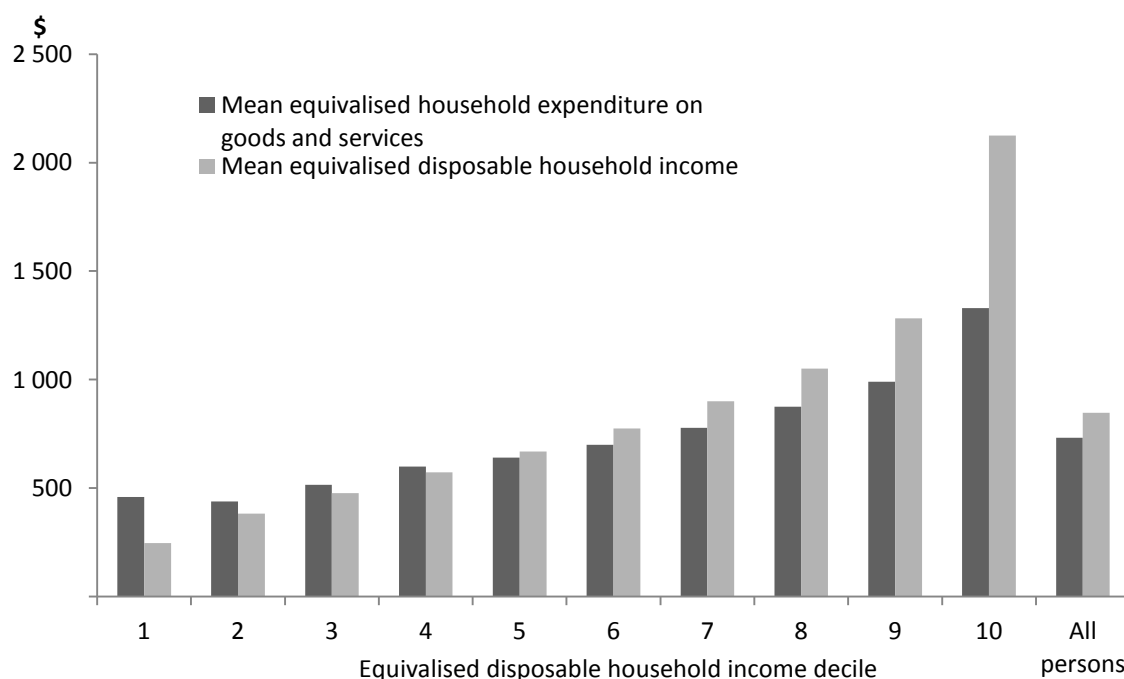
wealth is also important. Some people with low current incomes have considerable wealth, allowing them to maintain their consumption of goods and services at levels which would not be possible from their incomes alone. Using data from the 2009–10 SIH and HES, it is possible to examine the characteristics and economic circumstances of people living in households with low economic resources – low income, low wealth, and both low income and low wealth. Selected insights arising from analysis of household economic resources in multiple dimensions are highlighted in this section.

63 Since full expenditure data are only available from the HES, the mean expenditure values are derived from HES data. However the income and net worth levels defining the boundaries of the income and net worth quintiles have been derived using the larger dataset available from the SIH. To maximise comparability of the measures for the type of analysis undertaken, the household income, expenditure and wealth measures have been equivalised using the same scale, in order to adjust for household size and composition.

Coincident analysis of income and expenditure

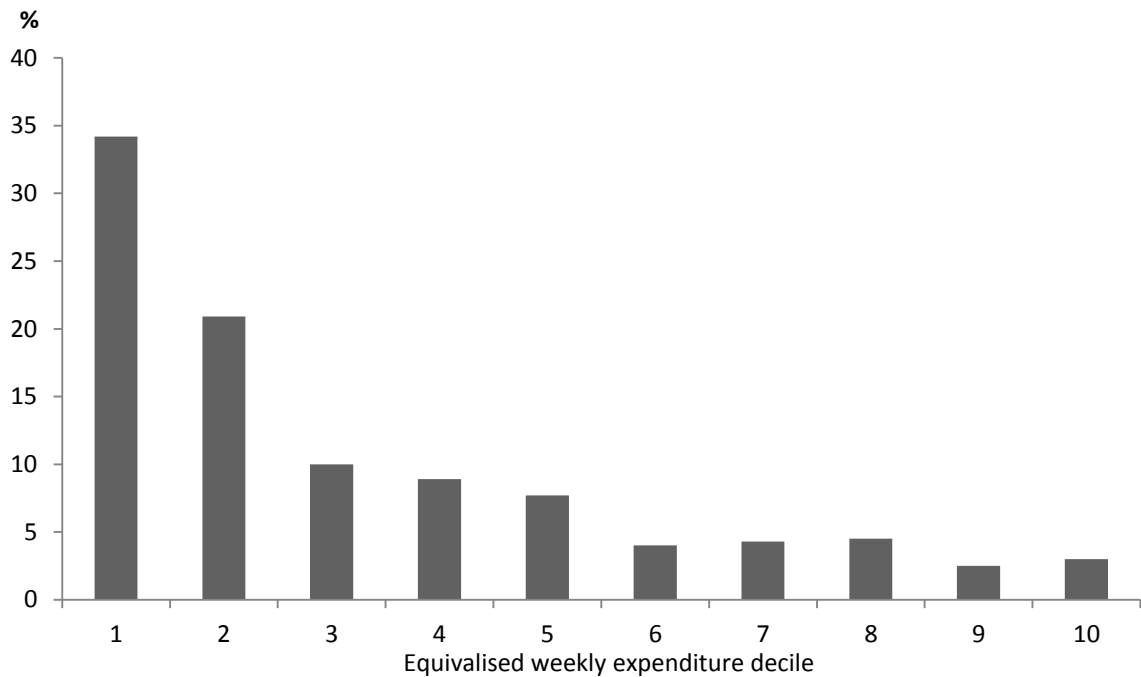
64 The ABS has long advised that some low income households have characteristics that indicate they have a higher standard of living than that implied by their incomes alone. Figure 8 shows that, in 2009–10, people with higher incomes generally had greater expenditures. However, people in the lowest decile of equivalised disposable household income, that is, the lowest 10% when ranked from lowest to highest income, had average equivalised expenditure higher than those in the second income decile. Many people in the bottom decile had expenditures that were higher than the average in the third, fourth or fifth income deciles.

Figure 8: Equivalised weekly income and expenditure by equivalised disposable household income decile, 2009 –10



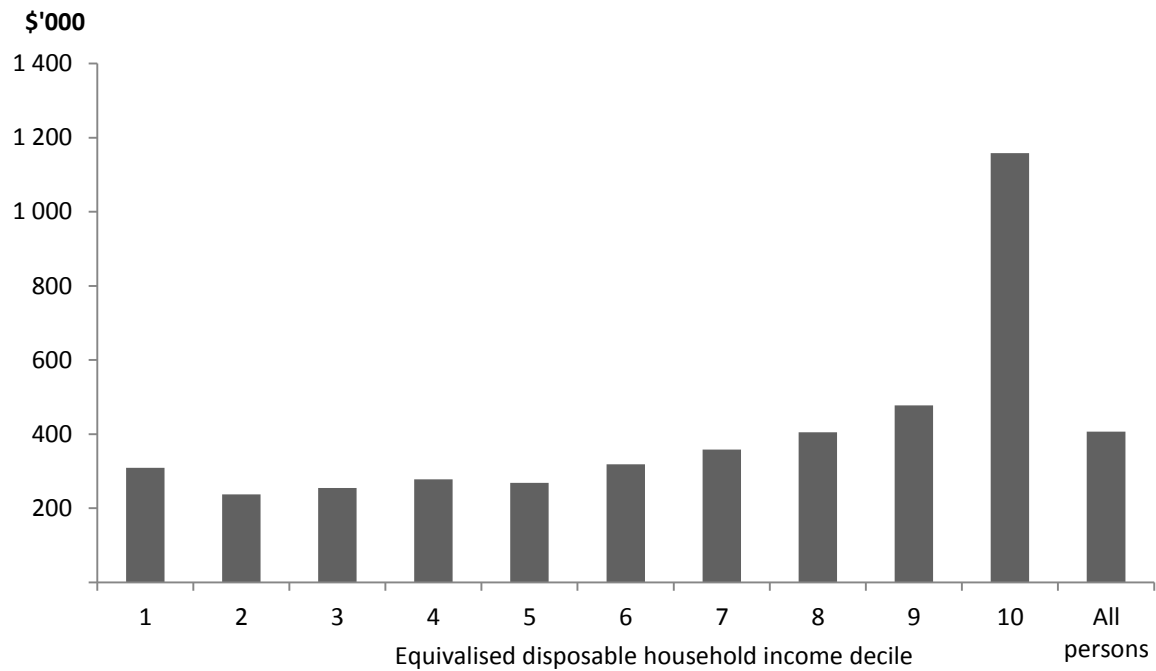
65 Figure 9 shows the distribution of equivalised expenditure for persons in the lowest equivalised disposable household income decile. Whilst a third of persons in the lowest income decile in 2009–10 were also in the lowest expenditure decile, many were higher in the distribution, including a quarter who were in the fifth expenditure decile or higher. This suggests that factors other than income, such as wealth, may be influencing consumption possibilities.

Figure 9: Persons in lowest equivalised disposable household income decile by equivalised weekly expenditure decile, 2009–10



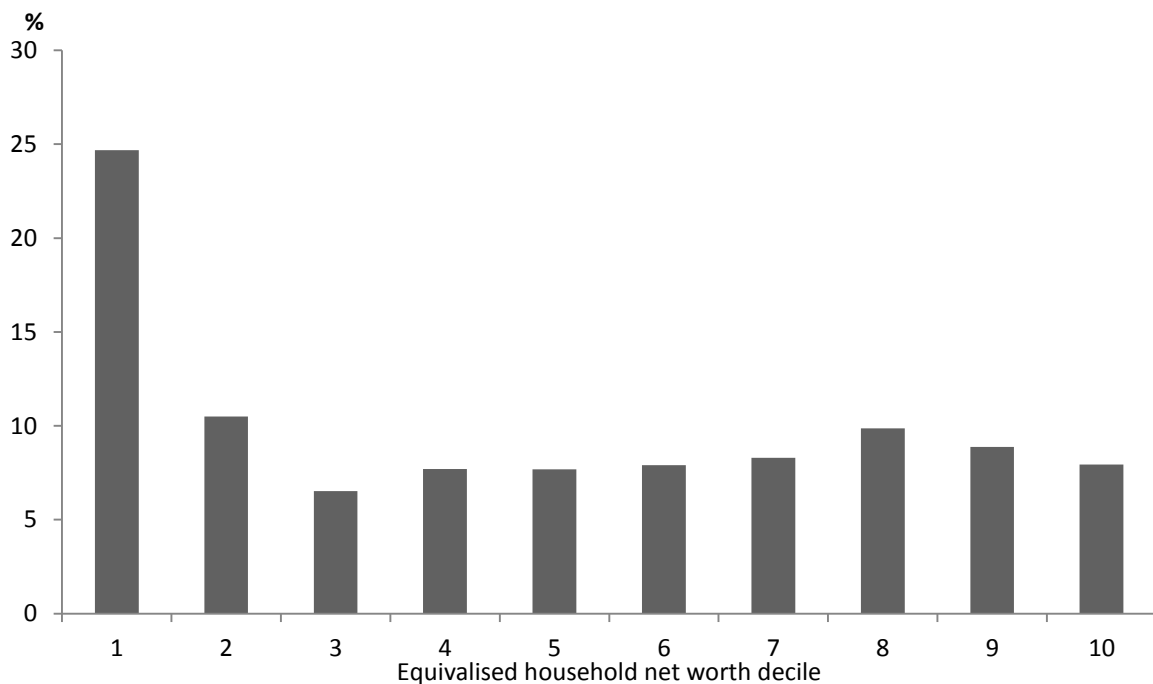
66 Figure 10 shows that the equivalised household net worth of persons in the first income decile was higher on average than the average equivalised household net worth of persons in deciles 2 – 5. The higher average net worth of persons in the lowest income decile partly explains the higher average expenditure of the lowest income decile.

Figure 10: Equivalised household net worth by equivalised disposable household income decile, 2009–10



67 However within the lowest decile of income, there are large differences in household net worth. Figure 11 shows that while a quarter of persons in the lowest income decile were also in the lowest net worth decile, substantial proportions were in much higher wealth deciles, including more than 40% in the top five deciles. People with low income but high levels of net worth are unlikely to be at risk of experiencing economic hardship, despite their low current incomes.

Figure 11: Persons in lowest equivalised disposable household income decile by equivalised household net worth decile, 2009–10



68 The results observed from the 2009–10 data are consistent with the findings from previous similar analyses. As a result of observing that people in the lowest income decile have higher average expenditures than people in the second income decile, the ABS has adopted the practice of using the characteristics of persons in the second and third income deciles, being a more representative group, when describing the characteristics of low income people and the changes in income over time experienced by such a group. This is not to suggest that some people in the lowest income decile may not be experiencing as much or greater economic hardship. Nearly a third of people in the lowest equivalised income decile were also in the lowest equivalised expenditure decile. One in four persons in the lowest equivalised income decile were also in the lowest equivalised wealth decile.

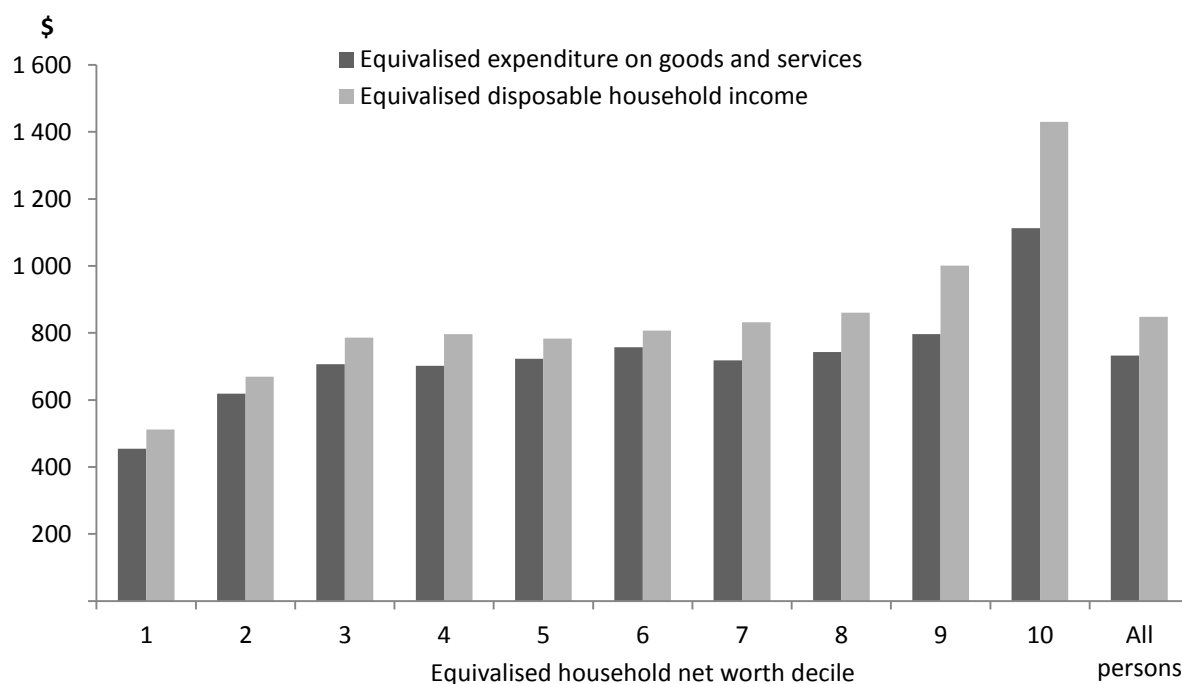
Distribution of household wealth

69 Household wealth is more unequally distributed than household income. People in the three lowest equivalised income deciles share 13% of all income, whilst people in the three lowest equivalised wealth deciles share only 3% of all wealth. People in the lowest household net worth decile had quite low average wealth compared to the population as a whole (\$7,800 compared to \$406,500). Persons with low reserves of wealth to fall back on may face financial difficulty in times of need, such as during any period of reduced income or due to any substantial unexpected costs.

Relationship between wealth and income and expenditure

70 Figure 12 shows that, in 2009–10, people in the lowest equivalised household net worth decile had considerably lower average expenditures than people in any other wealth decile. Conversely, people in the highest equivalised household net worth decile had considerably higher average expenditure than people in any other wealth decile. The relationship between net worth decile and average income follows a similar pattern to that observed between net worth decile and equivalised expenditure. The equivalised incomes of people in the lowest wealth decile were \$512 per week, on average, rising to about \$800 per week for people in wealth deciles 3–7, and then rising again to more than \$1,400 per week for people in the highest wealth decile. However, for net worth deciles 3–8, similar average equivalised expenditures were observed in each wealth decile.

Figure 12: Equivalised weekly income and expenditure by equivalised household net worth decile, 2009–10

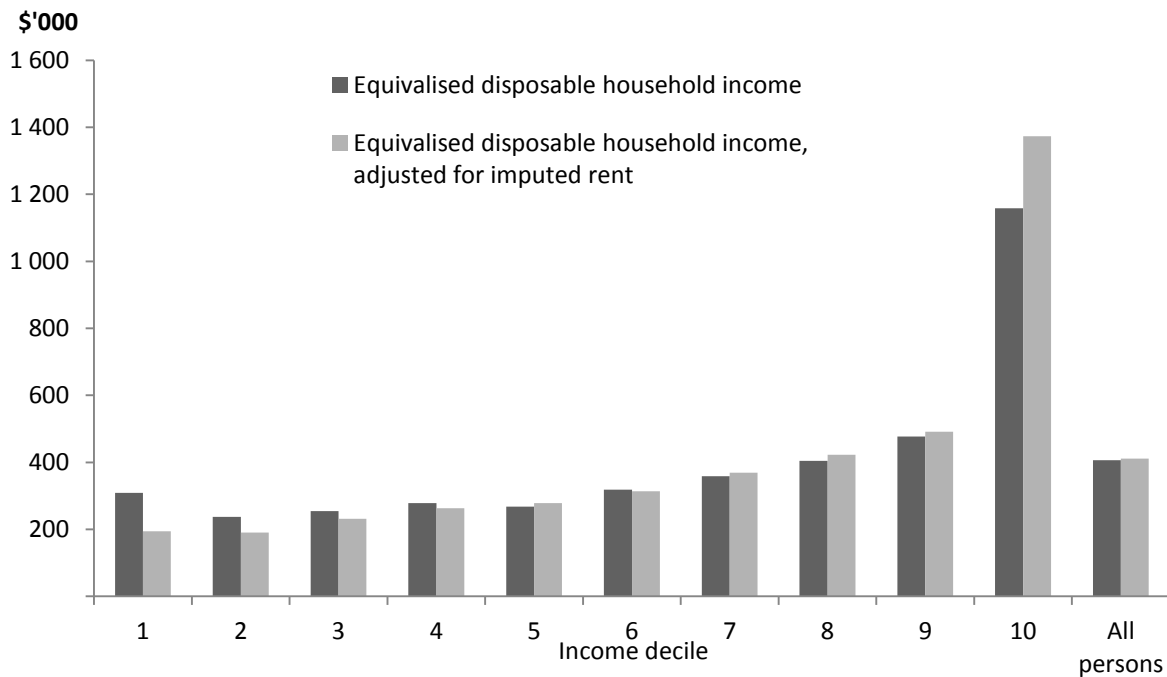


Broader measures

71 The income and expenditure measures used so far in this section can be broadened further by including the net imputed rent of owner-occupiers and subsidised renters. The inclusion of imputed rent in income allows the economic circumstances of home owners and renters to be more readily compared. It also allows for looking at changes over time as people change their tenures (through the life course as they age). Including imputed rent in the income measure (equivalised disposable household income, adjusted for imputed rent) generally results in home owners and subsidised renters moving up the income distribution relative to persons in other tenure and landlord types.

72 Figure 13 shows the effect of adding imputed rent to income on the relationship between income and net worth. Persons in the lowest decile of equivalised disposable household income have an average equivalised household net worth higher than the next four deciles of income (as shown in figure 10). However, when imputed rent is added to income, and the income deciles are recalculated based on the new measure, the equivalised household net worth of persons is lowest for people in the lowest two income deciles.

Figure 13: Equivalised household net worth by income decile before and after adjustment for imputed rent, 2009-10



73 In 2009–10, 70% of persons in the lowest decile of equivalised disposable household income were also in the lowest decile of equivalised disposable household income, adjusted for imputed rent. Despite the overlap between the two groups, the reordering of people in the distribution with the inclusion of imputed rent changes the average characteristics of people in the lowest income decile. In particular, the inclusion of imputed rent resulted in a relatively lower average age (49 years when imputed rent is included in the income measure compared to 57 years) and a significantly lower equivalised net worth for people in the lowest income decile (\$203K when imputed rent is included in the income measure compared to \$309K).

Joint income and wealth distributions

74 There are a number of ways to bring income and wealth data together to obtain measures of people's consumption possibilities. The ABS uses a *low economic resource* measure that includes people who are simultaneously in the lowest four deciles of both equivalised disposable household income (adjusted to include imputed rent) and equivalised household net worth. The strength of the *low economic resource* measure is that it excludes from the population of interest people with either relatively high incomes or relatively high wealth, and is therefore more likely to correctly classify people most likely to be at significant risk of experiencing economic hardship compared to measures using income or wealth alone. The *low economic resource* is a relative measure that classifies around 20% of the population to be in low income, low wealth households.

Table 14: Persons in low economic resource households, income, wealth and expenditure, 2009–10

		<i>Low economic resource group (low income and low wealth) (a)</i>	<i>Not low economic resource group</i>			<i>All persons</i>
			<i>Low wealth but not low income (b)</i>	<i>Low income but not low wealth (c)</i>	<i>Not low income and not low wealth (d)</i>	
Mean weekly equivalised adjusted disposable household income(e)	\$	465	1 006	494	1 264	905
Mean equivalised household net worth	\$'000	54	83	436	714	407
Mean weekly equivalised adjusted goods and services expenditure(e)	\$	500	794	632	1 006	789
Persons	%	22.6	17.4	17.4	42.6	100

(a) Persons in the low est two quintiles of both equivalised adjusted disposable household income (adjusted to include imputed rent) and equivalised household net worth

(b) Persons in the low est two quintiles of equivalised household net worth and the highest three quintiles of equivalised adjusted disposable household income (adjusted to include imputed rent)

(c) Persons in the low est two quintiles of equivalised adjusted disposable household income quintiles and the highest three quintiles of equivalised household net worth

(d) Persons in the highest three quintiles of both income and net worth

(e) Adjusted to include imputed rent

75 Table 14 presents mean income, wealth and expenditure estimates for persons living in *low economic resource* households, contrasted with those persons in the population living in households which satisfy only one of the necessary conditions (because of their higher income or wealth) and those that satisfy neither (because of their higher income and wealth).

76 This highlights the importance of recognising wealth in determining the *low economic resources* group. For persons in households with low income but not low wealth, mean equivalised household net worth was eight times higher than for persons in the *low economic resources* group. Mean equivalised adjusted goods and services expenditure was also higher than for people in *low economic resource* households (26% higher, on average), indicating a relatively higher material standard of living for persons with low income but not low wealth.

Future directions

77 Session 5 of this 32nd general Conference (Income and Wealth: Theory and Practice I) includes a paper which presents the work of an OECD expert group on the *Development of international guidelines and frameworks for micro statistics on household income, consumption and wealth*.

78 That expert group paper notes that measures of the distribution of income, patterns of consumption, redistribution through the tax and transfer systems, levels of consumer debt and net worth provide critical information for the design of economic and social policies. Measures based on each of these distributions provide insight into the barriers that affect labour force participation, and about those inefficiencies (in markets, policies and regulations) that act as a drag on aggregate economic performance.

79 That paper goes on to note that measuring the coincidence of household level measures provides additional insight into both behaviour and outcomes, e.g. to identify poverty and economic distress. Some households with low income, for example, may report adequate levels of consumption expenditure or wealth, or vice versa. Policies and programmes could be better targeted to households in need based on information on the joint distribution of all types of economic resources.

80 However, integrated analysis at the household level has significant data requirements that go beyond the measurement currently undertaken in most countries. Internationally recognised statistical frameworks and standards are required to underpin the measurement and analysis of micro household economic resource statistics to support the design of better government policies to avoid unintended consequences, in distributional terms, and better targeting of programs to assist households in need. Better informed policies hold the promise of delivering improved economic wellbeing to individuals, higher economy-wide performance, and better individual and societal outcomes across a range of dimensions of social concern.

81 The new guidelines and framework will provide improved support for all practitioners working in these subject areas.

82 ABS will use the new guidelines and framework to inform its ongoing development of measures and analysis of household level economic resources. ABS also hopes to participate in a future international (electronic) practitioners group to further methods in measurement for the analysis of income and wealth distribution. Sharing experiences across countries as more attempt broader measures of household economic resources and learn from the analyses that they undertake, will be used to enhance the ABS work in this area.

83 Locally, ABS is pursuing improvements to imputed rent estimates by integrating, Census, administrative and survey data. Data integration is expected to obviate the need for too much more direct collection of information in surveys of households. However, some reprioritising of survey content (to incorporate disability and wealth measures every two years) would facilitate more regular estimates of the major components of STIK, and inform more broadly on the changing distributional impacts of the tax and transfer system.

84 And as noted earlier, ABS will continue to regularly confront the macro and micro statistics for households to both improve the interpretative power of both datasets and to ensure that improvements in measurement are adapted, where relevant, for both datasets.

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