Social Transfers in Kind (STIK) – Methodologies for their Imputation, Impact on Economic Well-being and a Comparison of the Treatment in Macro versus Micro Data

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economic wellbeing and a comparison of the treatment in macro and micro data**

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Introduction

1   The system of government benefits in Australia has been designed to assist those in the community who are most in need of financial support. Social transfers in kind (STIK) are an important source of economic wellbeing for Australian households, particularly for households with the lowest private incomes.

2   The Australian Bureau of Statistics (ABS) produces estimates of STIK in both its macro statistics in the Australian System of National Accounts (ASNA) and in its micro statistics in output from the Survey of Income and Housing (SIH) and the Household Expenditure Survey (HES).

3   The ABS, following on from the work of the Organisation for Economic Co-operation and Development (OECD) Expert Group to Measure Disparities in a National Accounts Framework (EGDNA), published distributional measures of household statistics in 2013 (ABS2013a). The ABS has committed to continue this work and is currently working on publishing a time series of household distribution statistics.

4   This paper will: (i) detail concepts, data sources, and methods used by the ABS in producing STIK estimates (including education, health, social security and welfare, housing and electricity concessions) in both the ASNA (macro) and SIH (micro); (ii) compare STIK estimates in ABS macro and micro data; (iii) examine the impact of STIK on economic wellbeing and discuss whether income from STIK should be included in the measurement of low economic resource households; and (iv) discuss future directions and conclusion.

Section 1: Concepts, data sources and methods

Concepts

5   The 2008 System of National Accounts (2008 SNA) defines STIK as: "Goods and services provided by general government and non-profit institutions serving households (NPISHs) that are delivered to individual households. Health and Education are the prime examples. Rather than provide a specified amount of money to be used to purchase medical and educational services, the services are provided in kind to make sure that the need for the service is met".

6   "Social Transfers in Kind are recorded as an implicit transfer of income from government and NPISHs to households and a transfer of consumption goods and services. The measure of income after the transfer is called adjusted disposable income (rather than disposable income) and the measure of consumption is called actual final consumption (rather than final consumption expenditure)." (UN et al. 2009 3.83–4).

7   STIK estimates for both ASNA and SIH use the non-market valuation approach. The value of non-market output is estimated as the sum of costs of production and includes:

intermediate consumption, compensation of employees, consumption of fixed capital and other taxes (less subsidies) on production (UN et al. 2009).

Macro estimates of STIK – Data sources and methods

8   In the ASNA, macro level estimates for total STIK have been published in the adjusted disposable income accounts from 1959–60. Consistent with the 2008 SNA definition, these include STIK to households from both the government sector and NPISHs. Estimates of STIK delivered by NPISHs to households are based on transfers from the government to NPISHs.

9   Data is sourced from the ABS publication of Government Finance Statistics (GFS) (ABS 2013b). The total value of STIK is defined as Commonwealth, state or territory and local government expenditure, net of intra-government transfers, minus personal benefit payments in cash minus government revenue from the sale of goods and services (ABS 2005a).

10   GFS data are classified by: Government Purpose Classification (GPC), sector, and Economic Type Framework (ETF). This disaggregated data allows the estimates to be split between social benefits in kind, Individual and Collective consumption. Social benefits in kind are benefits such as: the Medicare rebate and discounts for concession card holders. Individual consumption is consumption which a household opts in to use, such as: education or housing. Individual consumption is added with social benefits in kind to estimate STIK. Collective consumption, such as policing and defence, is provided by the government for all households, but not included in STIK.

Micro estimates of STIK – Data sources and methods

11   The ABS publishes micro level STIK estimates consistent with standards set out in the Canberra Group Handbook on Household Income Statistics (CGH) (UNECE 2011). SIH included estimates of STIK for all households as part of the standard outputs in the 2011–12 publication. This recognises the importance of STIK in economic wellbeing and household income distribution measures. However, consistent with recommendations in the CGH, these estimates are not included in the headline income estimates and are published in a separate annex.

12   Prior to 2011–12, STIK was imputed in ABS micro statistics as part of a Fiscal Incidence Study (FIS) (ABS 2012a).This study investigated the effect of both government benefits (cash and in kind) and taxes (income and on production) on the distribution of income among private households in Australia. The study uses data from the HES which is conducted on a six year cycle and uses a sub-sample of SIH respondents. The first FIS was conducted for the 1984 HES, with subsequent studies being undertaken for 1988–89, 1993–94, 1998–99, 2003–04 and 2009–10.

13   The FIS methodology was significantly redeveloped in the 2003–04 study and further improved in 2009–10. In particular, the allocations of STIK for health benefits, housing benefits and child care concessions were improved. Electricity concessions provided by State and territory governments to households were included for the first time in 2009–10. The FIS will be next conducted following the 2015–16 HES.

Allocating STIK to households in the SIH and FIS

14   Government STIK are imputed for the provision of education, health, housing, child care, electricity concessions and other social security and welfare services. Reporting of the composition and household characteristics in the SIH and HES is used as the basis for allocating government STIK to households. In most cases, the total value of STIK is based on the cost to government of the provision of those services as estimated in the GFS.

15   Due to the methodologies used and the scope of the SIH and HES which excludes about 3% of the population (i.e. includes only usual residents of private dwellings in Australia except those living in very remote regions), a small amount of the GFS expenditure is not allocated to individual households. These amounts are provided below by type of STIK, in relation to reporting in 2011–12.

Education benefits

16   STIK is allocated for school education, tertiary education and other education benefits. In the HES and SIH, attendance at educational institutions is collected for all members of households, both adults and children. This includes the type of institution attended e.g. Catholic primary school, government primary or secondary school, or tertiary institution. Data on average expenditure for the different types of institutions attended are obtained from the Australian government department responsible for education services. The value of education benefits received by members of individual households is then allocated based on reported characteristics and summed to the household level.

17   Of the $58.0 billion of government expenditure on education available for allocation to households in 2011–12, $57.0 billion (98%) was allocated. Average education benefits allocated to all households were $126 per week. Households in the second and third equivalised private income quintiles received higher average education benefits than the other quintiles, reflecting higher average numbers of dependent children in those quintiles (ABS 2013c).

Health benefits

18   Health benefits were allocated for acute care institutions (hospitals), community health services (including doctor's visits), pharmaceuticals, the Private Health Insurance Rebate (PHIR) and other health benefits. Other health benefits cover public health services, health research and health administration not elsewhere classified. 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 survey population were allocated benefits according to the average utilisation rates for their age, sex and state or territory of residence.

19   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 (ABS 2009), which was the only data source available at the time that provided an indication of the use of health services by disability status.

20   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 FIS and SIH that recorded expenditure on private health insurance. From SIH 2013–14, the model will incorporate means testing that has been introduced by the Australian government which varies the amount of rebate received by households depending on the total taxable income of couples or singles. For this purpose the means testing threshold will be calculated for each income unit (IU) in the household as this aligns most closely with the criteria for determining the level of rebate to be received.

21   There was $93.0 billion government expenditure on health available for allocation to households in 2011–12, of which $92.3 billion (99%) was allocated. Households in the lowest equivalised private income quintile were allocated higher average health benefits ($250 per week) than the average for all households ($205 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, at $21 per week compared to an average of $6 per week for households in the lowest quintile (ABS 2013c).

Housing benefits

22   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 income quintile. In total, $2.3 billion was allocated in 2011–12 (ABS 2013c).

23   A substantial government expense for housing relates to the purchase of new dwellings for future subsidised rental purposes. These expenses were not allocated to survey households as the study is focussed on STIK received during the reference period.

Electricity concessions

24   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 the 2011–12 study, government expenses for electricity concessions ($643 million) were allocated to eligible households according to the value of the concession in their state or territory of residence (ABS 2013c).

Social security and welfare benefits

25   Government benefits were allocated for child care assistance and for other social security and welfare benefits. Child care assistance was modelled at the IU level depending on the reported number of children in formal care, the reported hours of care and the relevant income thresholds and tapers that are applied.
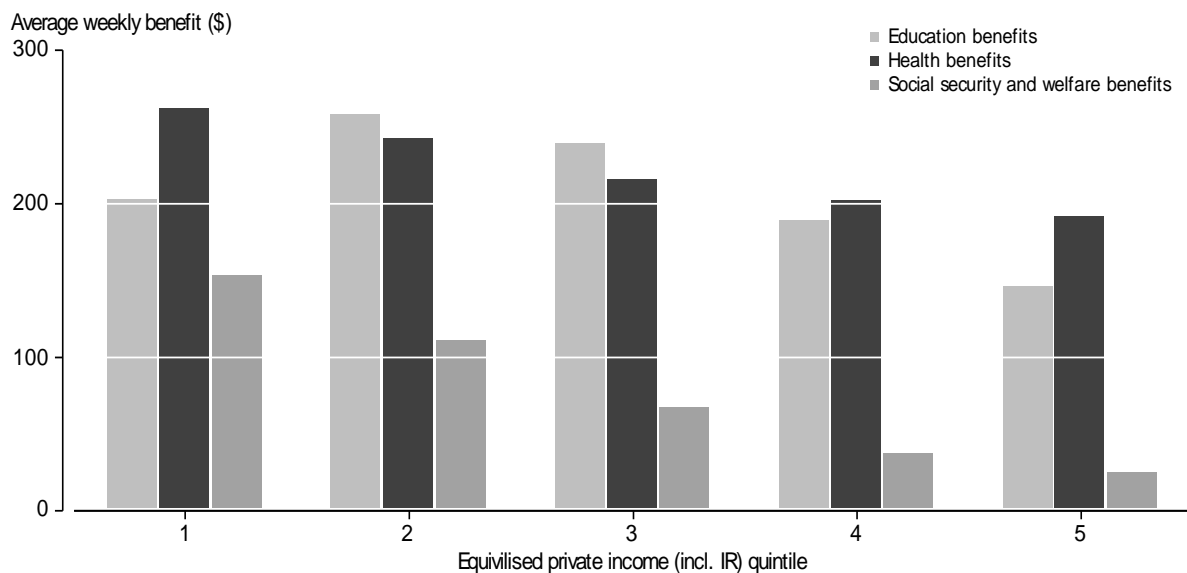
26   Government expenses relating to other social security and welfare programs (other than expenditure on direct cash payments, child care and residential aged care), include the

provision of goods and services to specific population groups with special needs, such as the aged and persons with a disability. Average STIK for different types of benefit recipients (such as family and child related recipients, age related recipients and disability support recipients) was calculated by dividing the GFS expenses for each category of expenditure by the number of recipients.

27   In 2011–12, of $33.6 billion expenditure by governments on child care and other social security and welfare services that was available for allocation to households, $31.9 billion (95%) was allocated. Child care assistance was highest for households in the third equivalised private income quintile (averaging $12 per week). Households in the lowest quintile were allocated the highest benefits for other social security and welfare benefits ($131 per week) compared to an average of $61 per week for all households (ABS 2013c).

28   Figure 1 shows STIK from health and social security and welfare benefits were highest for households in the lowest equivalised private income quintile and decreased as private incomes increased. Education benefits were also lowest in the top private income quintile.

Figure 1: Selected STIK by equivalised private income quintile, 2011–12
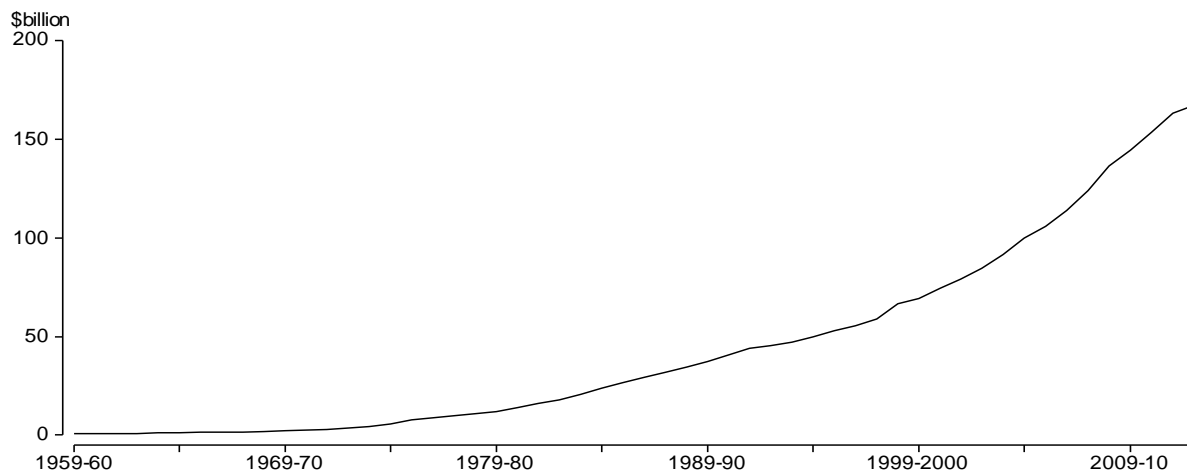

Source: ABS publications 6523.0 and 6537.0.

Section 2: Comparison of macro and micro estimates of STIK

29   Both the ASNA and SIH/HES use GFS as the key source for STIK estimates. From this, the aggregated data is allocated to individual households in the micro statistics by the methods and indicators mentioned earlier in this paper. STIK is published in the ASNA at an aggregated total level.

30   The ASNA publishes a time series, in current prices, of STIK from 1959–60. Figure 2 shows total STIK as published in the ASNA growing steadily for the entire time series.
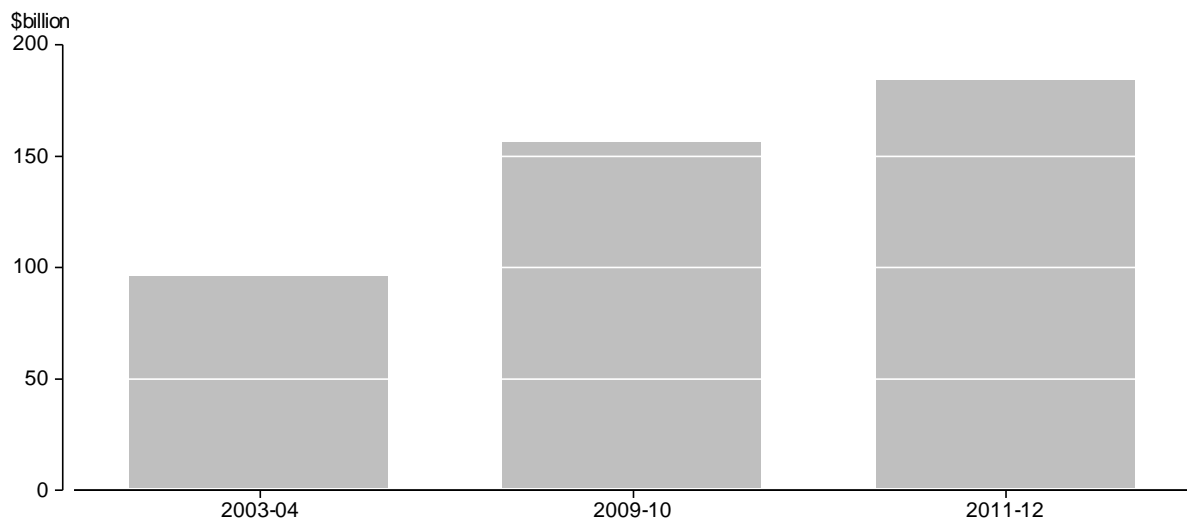
Figure 2: Total STIK as published in ASNA

$billion

Source: ABS publication 5204.0

31   The SIH/HES has three data points published over the last decade. Figure 3 shows total STIK as published in the SIH and HES for these periods.
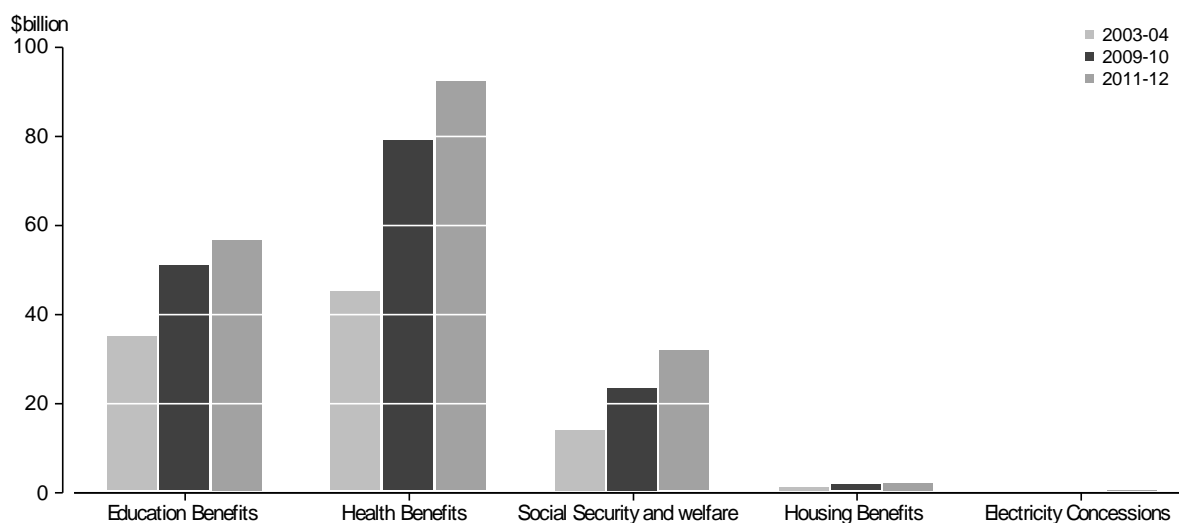
Figure 3: Total STIK as published in SIH and HES

$billion

Source: ABS publications 6523.0 and 6537.0.

32   The SIH/HES breakdown of STIK by benefit is an important dissection of the data. This allows policy makers to monitor particular benefit programs, household resilience and income equality. Figure 4 shows SIH and HES STIK by benefit for the three published years.
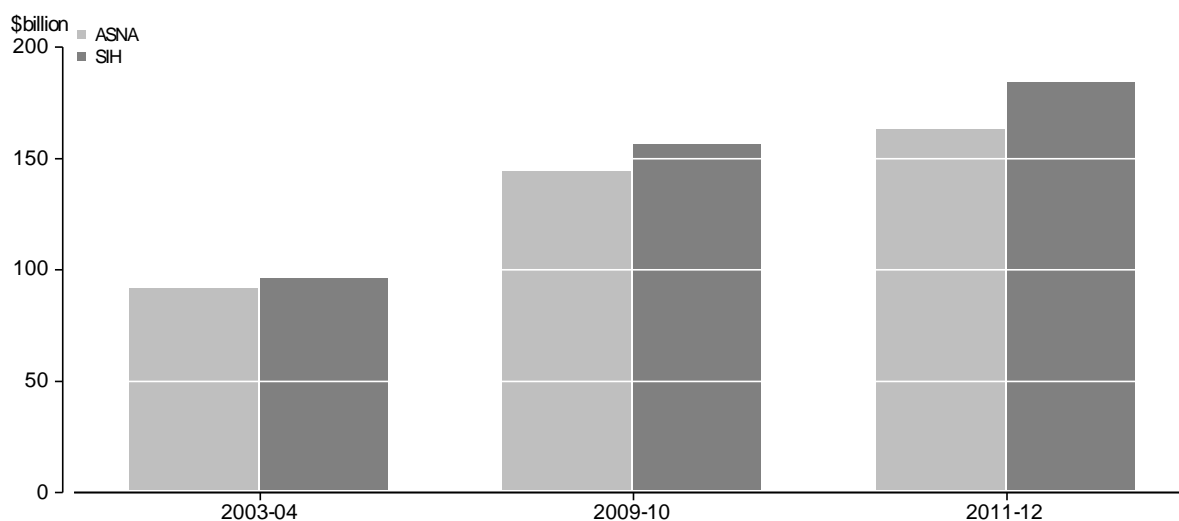
Figure 4: STIK, by selected benefits, as published in SIH and HES

Source: ABS publications 6523.0 and 6537.0.

33   As shown in Figure 5, there are differences between the aggregate macro and micro estimates of STIK.

Figure 5: SIH/HES and ASNA estimates of total STIK

Source: ABS publications 5204.0, 6523.0 and 6537.0.

34   The divergence in estimates is caused by measurement issues and differing scopes. Measurement issues relate to the transactions included (grants, wages, etc.), while scope relates to the benefits included (aged care, education, etc.). These issues stem from the difficulties in valuing STIK according to a cost of production approach as well as in some cases, a subjective judgement in applying international standards.

35   Both ASNA and SIH/HES use GFS data as a starting point and obtain information by GPC, ETF and sector. However, SIH/HES sum the expenses associated with running the benefit program which results in all transactions that are associated with the benefit being included in the STIK estimate. In contrast, the ASNA sums the cost of delivering the benefit,

therefore, certain transactions, such as grants or current transfers are excluded from the calculation.

Measurement issues

36   The main measurement issues that affect the comparability of SIH/HES and ASNA estimates relate to the treatment of funded and unfunded pension fund expenses, consumption of fixed capital (COFC) and current grants and transfers. Analysis of the detailed input data from the GFS used for the macro and micro estimates has allowed these differences to be quantified below.

37   SIH/HES include funded and unfunded pension fund estimates in the calculation of STIK which equated to $8.3 billion in 2011–12. The ASNA does not include pension fund estimates as this expense is captured in the collective consumption component of the ASNA.

38   SIH/HES include the GFS measure of depreciation of fixed assets which refers to "amounts charged to current operations in respect to the consumption of non-current tangible assets related to non-defence" (ABS 2005a). Depreciation data for SIH/HES is directly collected from the state treasuries and the Australian federal Treasury. The value of depreciation for 2011–12 included in the SIH calculation of STIK equated to around $6 billion.

39   The ASNA measures COFC based on the Perpetual Inventory Method (PIM). This approach estimates "capital stocks by cumulating flows of investment, corrected for retirement and depreciation (in the case of net stocks) or efficiency losses (in the case of productive stocks)." [COFC is] "the decline, in the course of the accounting period, in current stock of fixed assets as a result of physical detrition, normal obsolescence or normal accidental damage" (OECD 2009). The value of COFC for 2011–12 included in the ASNA calculation of STIK equated to around $20 billion.

40   While in essence the measure of depreciation and COFC are the same concept, obtaining estimates using different underlining assumptions from the treasury departments and the PIM lead to a significant divergence in the final estimates. The GFS estimate is aligned to an accounting treatment of depreciation, while the ASNA COFC is an economic treatment.

41   Other transactions also affect the divergence in the estimates, for example, SIH/HES include current grants and transfers in their measure of STIK which are not included in ASNA. These transactions are difficult to allocate to individual consumption particularly when the benefit might be delivered by an organisational body also providing benefits to the community at large (collective consumption). Even if the transfer is intended for an individual benefit, there is a lack of macro information allowing for this distinction to be made.

Scope issues

42   The main scope difference between SIH/HES and ASNA is in relation to non-private dwellings such as aged care and mental health institutions. Other differences include treatment of some STIK such as child care assistance and recreation, culture and religion.

43   The ASNA includes government expenditure on aged care and mental health institutions as part of STIK, whereas, SIH/HES does not. As the scope of the SIH and HES is

usual residents of private dwellings in Australia, non-private dwellings, such as aged care and mental health facilities are excluded from the survey and the SIH/HES estimate of STIK (ABS 2012b).

44   Childcare assistance can be paid in cash to the household or directly to the childcare facility. The ASNA has taken a practical approach to childcare benefits and included the cash component paid directly to households (Child Care Rebate) as a social benefit and the other component (Child Care Benefit) as STIK. Similarly, ASNA treat the PHIR as a cash benefit. This practical approach was taken due to the difficulty in identifying cash and in kind payments in GFS. These cash rebates were valued at around $8 billion in 2011–12 (ABS 2013c). SIH/HES include both the Child Care Rebate and the PHIR in STIK allocations.

45   Following 2008 SNA, ASNA also includes recreation, culture and religion in STIK estimates e.g. national parks and wildlife and cultural facilities and services. These estimates equate to around $3 billion for 2011–12. SIH does not include this expenditure.

Valuation issues and application of statistical standards

46   The process of confronting STIK estimates for macro and micro data is a useful exercise for identifying STIK measurement issues. This exercise has demonstrated that, for the ABS, the most significant measurement issues lie in the valuation of STIK. These issues are mainly driven by the fact that a market price for STIK is not observable, and so STIK is valued according to the cost of production.

47   Measuring the value of a service using the cost of production approach in some cases requires a subjective judgement which may lead to different decisions being made in the compilation of different statistics. These issues include differentiating the costs associated with the provision of individual services from those associated with the provision of collective services. This is particularly true where one organisation provides both types of services, for example a health department providing both individual health services (operations etc.) as well as a collective health service such as a public health information campaign. Another area where subjectivity may play a role includes deciding whether or not to include transfers and grants, particularly when there may be little information on the nature of these payments.

48   The valuation of STIK also highlights some issues in the international standard 2008 SNA. If the cost of production approach is to provide a true value for the service provided then we need to ensure that all costs are captured. One such cost is the recording of pension liabilities, currently not all of the costs associated with unfunded pension liabilities are captured in the core accounts under the 2008 SNA. Some expenses are only shown in the supplementary table 17.10.

49   A second issue related to the valuation of non-market services is recording the full user cost of capital. This paper has shown that two different data sources are used in the ABS, with the micro data based on depreciation estimates recorded by government agencies and the macro data measure of COFC based on the PIM. However neither of the approaches allow for a rate of return to the owners of the capital. This creates an asymmetry when compared to the treatment of capital in market production, and hence understates the true cost of capital from non-market production.
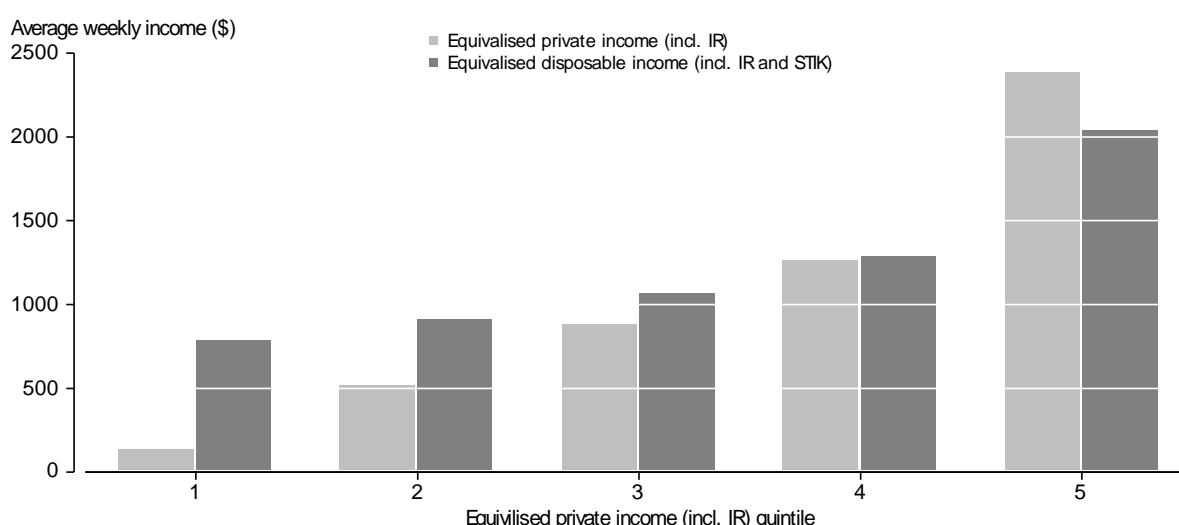
50   Tellingly, the statistical standards issue lead to the value of non-market activity being understated and hence the true value of STIK also being understated.

Section 3: Impact of STIK on economic wellbeing and measurement of low economic resource households

Income distribution

51   In Australia, low income households receive more social benefits in cash and in kind than high income households. Figure 6 shows that in 2011–12, households in the lowest quintile of equivalised private income including imputed rent (IR) had average private income of $136 per week. Their average disposable income, including IR and STIK rose to $788 per week. These were respectively 13 percent and 65 percent of the average for all households.

Figure 6: Equivalised household income, by equivalised private income quintile, 2011–12

Source: ABS publication 6523.0.

52   Table 1 shows that the income share of households in the lowest quintile increased from 2.6% of total equivalised private income including IR to 11% of total equivalised disposable household income (EDHI) including IR and STIK. Households in the highest quintile decreased from 46% to 34%.

53   Another measure of income distribution is the Gini coefficient which is a single statistic indicator of the degree of inequality, with values closer to 0 representing a lesser degree of inequality, and values closer to 1 representing greater inequality. In 2011–12, the addition of STIK to EDHI including IR decreased the Gini coefficient from 0.303 to 0.226, a decrease of 25%.

Table 1: Income distribution measures, 2011–12

		Equivilised private income (incl. IR)	Equivilised disposable income (incl. IR)	Equivilised disposable income (incl. IR and STIK)
Mean income per week	$	1,038	970	1,220
Median income per week	$	882	837	1,106
Income share				
Lowest quintile	%	2.6	8.2	11.0
Second quintile	%	10.1	13.2	15.3
Third quintile	%	17.0	17.3	18.1
Fourth quintile	%	24.4	22.6	21.7
Highest quintile	%	45.9	38.7	33.9
All persons	*%*	*100.0*	*100.0*	*100.0*
Gini coefficient	no.	0.433	0.303	0.226

Source: ABS publication 6523.0.

Low economic resource households

54   The ABS uses a Low Economic Resource (LER) measure that includes people who are simultaneously in the lowest four deciles of both EDHI adjusted to include IR and equivalised household net worth. The strength of the LER measure is that it excludes from the population of interest people with either relatively high incomes or relatively high wealth. Therefore, it is 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 LER is a relative measure that classifies around 20% of the population to be in low income, low wealth households.

55   Income and wealth measurements are important to better understand the risk of household economic hardship. ABS micro estimates have included estimates of both income and wealth in SIH and HES since 2003-04. The HES also includes data on household expenditure and financial stress.

56   The inclusion of STIK in income estimates of LER is open to debate among users of the statistics. Some would argue that STIK should not be included as households cannot choose to use the income from STIK for another purpose, and that it could imply that households with a high level of need (for example health care) are 'well off' due to the high level of implied income.

57   Table 2 shows the impact of including IR and STIK in the LER measure. It shows that the mean EDHI is higher when the income deciles are derived with STIK in the LER income measure compared to without STIK ($519 compared to $466 per week); similarly for average EDHI including IR ($522 and $480 per week, respectively). The mean equivalised net worth of households is also higher when STIK is included in the LER measure.

58   Table 2 also shows that when STIK is included in the LER measure, the composition by household group changes. In particular, the proportion of households typically identified as being most at risk of experiencing economic hardship (such as couples and lone person households 65 years and over, those with a disability and those with dependent children), reduces. These are replaced by couple and lone person households under 65 years. In 2011–12, the latter increased from 12.4% to 16.7% of the LER population when STIK was included because they receive, on average, lower health, education, child care and other social security and welfare benefits.

Table 2: Impact of imputed rent and STIK in LER measure (a), 2011–12

		LER using EDHI	LER using EDHI (incl IR)	LER using EDHI (incl IR and STIK)	All persons
Mean weekly household income					
Equivilised disposable household income (EDHI)	$	466	496	519	918
EDHI incl. imputed rent	$	480	501	522	970
EDHI incl. imputed rent and STIK	$	794	809	793	1,220
Mean equivilised net worth	$'000	52	54	57	413
Average age of reference person	years	42	42	41	48
Tenure type					
Owner without a mortgage	%	4.0	3.5	3.0	25.5
Owner with a mortgage	%	23.4	26.5	27.6	43.3
Private Renter	%	52.1	52.1	52.8	25.2
Selected household groups					
Couple family with dependent children	%	44.6	45.8	44.1	42.1
One parent family with dependent children	%	18.5	17.9	14.5	7.0
Couple or lone person, 65 and over	%	7.3	6.5	5.6	10.8
Couple or lone person, under 65	%	13.1	12.4	16.7	18.8

(a) Persons in LER households are those in the lowest four deciles of equivalised income (as defined) and equivalised household net worth

Source: ABS Survey of Income and Housing

59   As this paper has shown, STIK is an important mechanism used by government to allocate resources and ensure the needs of specific households are being met and as such, it is important to show the impact of STIK. LER measures can be produced both including and excluding STIK, to meets the needs of different users as well as transparently showing the impact of STIK arrangements on outcomes for households.

60   However, the ABS did not include STIK in the SIH 2011–12 published estimates of LER because the aim of this measure is to identify households most at risk of experiencing economic hardship, rather than measuring the economic resources they receive. This approach will be reviewed when data from SIH 2013–14 is published.

Section 4: Future Directions and Conclusion

61   STIK are a key mechanism by which governments redistribute resources in the economy. The value of STIK in Australia is over $150 billion annually and has been growing strongly over a number of years. The appropriate measurement of STIK is vital in order that statistics (both macro and micro based) correctly reflect the economic circumstances of households.

62   The ABS measures STIK in both the macro and micro data sets, with both sets of statistics basing their estimates on GFS. The measurement of STIK in the micro statistics, in particular, requires a reasonable amount of work in order to appropriately allocate to household types. However this paper demonstrates that it can be done and, importantly, can be done in a way which generates broadly coherent results with those in the macro statistics.

63   This coherence is important in ensuring that a relevant and reliable set of statistics, on the Household Sector, are being presented within the official statistics system. Coherence also supports further developments in official statistics, specifically in producing distribution of household income, consumption and wealth within the National Accounts Framework.

64   Undertaking a confrontation between the macro and micro sets of statistics serves as an important quality assurance exercise – identifying measurement issues in either of the datasets. Measuring STIK also shows the difficulties in measuring non-market activity, and illustrates some areas of the international standards which, if reviewed, may lead to improved measurement of non-market activity including STIK.

65   The ABS has a commitment to producing reliable and coherent statistics on the household sector. The ABS will be using the results of this exercise to identify and rectify measurement issues, with the intention being to bring the two sets of estimates closer together. This will improve the overall quality of the data being provided as well as enabling further analysis, including studies of distributions within the National Accounts framework.

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