THE GEOGRAPHY OF PERSONAL AND HOUSEHOLD INCOMES: DATA FROM THE CENSUS OF AUSTRALIA, 2016

Ian Manning, National Institute of Economic and Industry Research and charter member, Brotherhood of St Laurence

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"Data is not information, information is not knowledge, knowledge is not understanding and understanding is not wisdom." (Clifford Stoll)

Synopsis

For two decades the National Institute of Economic and Industry Research has prepared a *State of the Regions* report for the Australian Local Government Association. Each annual report includes measures of inter-regional income inequalities based on National Accounts data. This paper first reviews the National Accounts indicators and then considers alternative indicators based on Census data, including the geographic patterns they reveal. The comparisons were made for each of the 544 LGAs listed in the Census but for purposes of exposition the results were aggregated to 67 regions.

The 2016 Census required respondents aged 15 and over to tick a box to denote their weekly income. The Census form included the comment: 'information from this question provides an indication of living standards in different areas'. The Census income data are published as personal income and equivalised household income. The geographic patterns revealed in the Census data were described in the *State of the Regions* report for 2019-20 and are here further analysed, concentrating on the proportion of households, by region, reporting incomes in the bottom and top deciles of equivalised income.

The geographic distributions of income documented from the Census indeed throw light on living standards, but there are no conclusions, only further questions, such as the following.

■ In what kinds of region do low personal incomes generate low equivalised incomes?

■ Why is Sydney so income-segregated?

■ What are the effects of fly-in fly-out and indigenous residence on living standards in remote areas?

National populations are a natural focus for studies of inequality, since national governments preside over taxation and public expenditure policies which directly affect the distribution of income and wealth. In Australia the national distribution of income, wealth and consumption expenditure, both between individuals and households, has been assiduously documented in a series of sample surveys, beginning with the ABS survey of income distribution for the Poverty Inquiry in 1973 and continued since, particularly in the ABS surveys of income and household expenditure and in the University of Melbourne HILDA survey. The surveys have been analysed in a search for trends, with the results somewhat dependent on the indicators of inequality chosen. The most definite results have included the association between income and employment (employed people generally receive higher incomes than not-employed), income and industry of employment (some industries pay better than others), income and gender (men tend to have higher individual incomes than women) and income and age (both young and old have lower incomes than the middle aged) (Productivity Commission 2018). The national distribution maps down to the regional level, so that regions where unemployment rates are low are expected to have high regional incomes, and likewise regions with middle-aged populations and regions where employment is concentrated in high-income industries. (One might add regions with masculine populations, but fortunately the sex ratio does not vary much between regions except as a consequence of age distribution.)

Though regional inequality of income can confidently be predicted from the national sample surveys, they cannot be proven from this source; neither can it be shown that regional inequality is greater or less than indicated by the factors identified at national level due to the influence of regional factors. The problem is simple: national sample surveys do not yield results which are statistically significant at the regional level. Two main sets of indicators are in use to identify rich and poor regions. One set derives from administrative sources and is summarised in Gross Regional Product, the other set derives from the Census. This paper describes and assesses the available measures, limiting itself to recent estimates (the financial year 2018-19 and Census 2016). It does not attempt to quantify trends, but does attempt to identify the reasons why particular regions are currently rich or poor.

Macroeconomic measures of regional inequality

Gross Regional Product

Despite its inadequacies and biases, Gross Domestic Product is commonly used in comparisons of the economic heft of nations and (more tenuously) of their prosperity. The ABS prepares the official estimates of Australian GDP and also estimates the equivalent, Gross State Product, at state/territory level. By a process involving reams of assumptions and much approximation the National Institute of

Economic and Industry Research (NIEIR) has further extended these estimates to the regional level, thus estimating Gross Regional Product (GRP). The Institute prepares estimates by Local Government Area but in this paper LGAs are aggregated to 67 regions covering the whole country – an aggregation used in the annual *State of the Regions* reports which the NIEIR prepares for the Australian Local Government Association (NIEIR 2019 and previous years). Less than half of these regions are fully urbanised, mostly as parts of the major metropolitan areas, while the rest are at least partly rural though most of them include a provincial city. The urbanised regions are much smaller geographically than the less urbanised regions but have larger populations, generally in the range from 300,000 to a million residents as against 100,000 to 300,000 residents in the less urban regions.

To meet the needs of national macroeconomic management, GDP estimates are produced within a few months of the period covered. Indeed, using lead indicators and projection techniques, they can be produced more or less currently. The preliminary estimates are based largely on national surveys, such as the Labour Force survey, but are liable to adjustment as administrative data comes in, particularly from tax returns and Centrelink. Such adjustment is particularly likely for GRP estimates, since regions do not necessarily follow the trends documented in national surveys.

The aggregate GRP estimates by region say a great deal about the relative economic power of regions, but for most purposes it is desirable to discount for regional population. Concern for regional efficiency in the utilisation of labour underpins comparisons of GRP per worker employed in each region. By this measure by far the most productive Australian region is the Pilbara/Kimberley region of WA. The mining boom may have subsided but it has left behind a large number of highly-mechanised quarries producing high values of output per worker – hence high GRP per not only in Pilbara/Kimberley but in the other WA mining region, in the NT and in the coal-mining regions of Central Queensland and the Upper Hunter Valley. Only one other region competes in this league – Central Sydney, with its highly profitable finance sector.

Are these the most prosperous regions in the country? Maybe they are, at least from the point of view of big business (businesses anchored in these regions wield great political power) but not so from the point of view of the residents of the region. In the mining regions up to 85 per cent of GRP is siphoned off in the form of (gross) profits and taxes. Workers in mining are amply rewarded, perhaps, but not enough to guarantee the prosperity of all residents of the regions where they work – and indeed, thanks to fly in fly out (FIFO) they themselves do not necessarily live in the region where they produce their valuable outputs. Taxes raised in the mining regions are redistributed in the government expenditures of the tax-collecting government, while the gross profits are redistributed to corporate executives, superannuation recipients and other shareholders many of whom are overseas. The GRP of Central Sydney and the other metropolitan centres is also redistributed, but not perhaps as much since the executive and building-owner incomes generated in the city centres tends to accrue locally. The proportion payable overseas is also probably lower than in the mining regions.

At the other end of the scale, it is estimated that GRP per worker is low in many rural regions and also in outer suburban regions. Are these regions depressed? Not necessarily: where local businesses are labour-intensive or locally-owned the proportion of GRP which is received as income by the residents of the region is likely to be relatively high. Accordingly, while the Pilbara and Central Sydney rank as Australia's two richest regions ranked by the GRP per person employed and the Far

North and West of SA and the North-West of Tasmania rank as the two poorest, these are not necessarily the regions with the richest and poorest residents. Since much of the redistribution of GRP between regions occurs through profits, a better indicator of relative prosperity might be the non-profit component of GRP, which comprises two elements: wages and the mixed profit/labour incomes of owner-operated businesses, where 'wages' are broadly defined to include all payments by employers to employees including superannuation contributions. The traditional term is earned income.

A second major form of private-market redistribution between regions is through commuting. At the 2016 Census the median journey to work was around 10.5 km and many such journeys crossed regional boundaries, particularly within metropolitan areas. Suburban regions and ex-urban regions within driving distance of the metropolitan areas and the FIFO airports benefit from the commuter incomes of people who live in the region but work elsewhere.

When attention is switched from labour productivity (the value of output produced in a region to labour input) to incomes received it becomes appropriate to relate income received to the residents of the region rather than to the number of jobs in the region. In the rest of this paper incomes are related to regional residential population rather than to employment.

Gross Regional Product (Residential) per capita

Using Census data on the location of residences and workplaces, most elements in Gross Regional Product can be redistributed from their regions of production to the regions where they are received as incomes. The major exceptions concern corporate profits, where the geography of redistribution is nothing if not complicated. GRPR thus includes all elements in GRP save corporate gross profits (on the income-generation side) and the dividends, interest payments and superannuation payouts by which they reach the owners of financial assets (on the income-receipt side). Judged by GRPR per resident the richest region in Australia is the ACT, closely followed by inner Sydney. The poorest regions are Wide Bay Burnett in Queensland, the outer Northern suburbs of Melbourne and the NT outside Darwin. High GRP per worker in the city centres tends to translate into high GRP per resident, but not necessarily so in the mining regions. GRPR per capita is indeed quite high in Pilbara Kimberley, but in the coal-mining regions of NSW and Queensland it is no more than average.

The major component of GRPR is income from wages, salaries and locally-owned small businesses, or earned income.

Earned incomes

The two determinants of earned income are hours worked and the hourly rate. Earned income per employed person will be low in regions with lots of part-time work and little overtime; it will similarly be low in regions where the hourly rate is low. These two variables are collected in the ABS Labour Force Survey and in theory should completely explain average earned income but in practice a third variable is required, covering the profitability of local business, which is outside the purview of the Survey.

The incidence of part-time work and overtime is reflected in average hours worked per week per employed person. The national average is currently around 32 hours and nearly all regions return averages within two hours either way – that is, between 30 and 34 hours. The exceptions are four mining-affected regions, with the longest average work week being the 41 hours worked during the survey week by residents of the Pilbara/Kimberley region.

Second, the average hourly rate. NIEIR has estimated the regional pattern of earned incomes largely from tax statistics, benchmarked to the earnings data in the ABS State Accounts. Divided by an estimate of hours worked, this gave a national estimate for 2018-19 of $42 per hour worked with an inter-regional range from $29 to $66. Regions with particularly high average hourly earnings included the City of Sydney and its inner suburbs and the ACT and its overflow into NSW; no other region matched these earnings. By contrast, low average hourly earnings were estimated for Tasmania, for SA outside Adelaide and for parts of Queensland. With estimates like these, in which the figures for apparently similar regions separated by a state boundary diverge, one begins to question the control totals provided by the ABS and also the assumption that all regions within a state contribute to the state control total in proportion to their tax returns. It is quite likely that an above-average proportion of the people who reside in Central Sydney are even better paid than their tax returns would indicate. In any case, high hourly earnings rates in Central Sydney and Canberra tally with the high rates of pay self-awarded by the finance sector prominent in Sydney, and spread to Canberra by public service executive pay relativities.

Thirdly, the profitability of locally-owned business affects earned income per employee. A case in point is the WA wheat belt, where a high proportion of total income is from locally-owned farm businesses which are highly profitable, at least in reasonable seasons.

Taking these factors together, the average employed Australian earned approximately $68,000 in 2018-19. Judged by average earnings, the rich regions were central Sydney and the ACT, largely due to high average rates of pay, and the WA wheat belt, where relatively few workers generated high mixed profit/labour incomes in farming. The mining regions were also above average, as were the other metropolitan centres, especially Central Perth with its close relationship to mining. At the other end of the scale, average earnings were low in coastal resort regions such as the South and North Coasts of NSW, probably thanks to an abundance of part-time work in unprofitable cafes and similar tourist-oriented businesses. They were also low in the middle and outer suburban regions of the metropolitan areas due again to a lack of profitable locally-owned businesses. These patterns accord closely with differences in industry earnings documented in the income surveys.

The association between income and demographic characteristics has also been well documented in the income surveys – the personal incomes of employed people are higher than those of people who don't have jobs, men's personal incomes tend to be higher than women's, and the incomes of 'prime age' workers tend to be higher than those of workers at the beginning and end of their careers. Regional demography thus influences regional incomes. Currently half of all Australian residents work for an earned income – a ratio which varies regionally from 36 to 61 per cent. The regions with high jobholding rates are, by and large, inner metropolitan (including Darwin but not Canberra) – regions of abundant employment opportunity with relatively few children and old people. The low-jobholding regions fall into three groups. The first, expected group is coastal resorts with large retiree populations. The second is remote regions with a serious mismatch between employment opportunities (many of which are fleeting jobs in construction or mining suited to FIFO workers) and

places of residence, particularly the homelands of Aboriginal residents. The third has but one, singular instance: the mid-western region of Sydney, stretching from Canterbury to Fairfield and Liverpool. The low jobholding rate in Mid-Western Sydney is not explicable by the age composition of the population (the region has a slightly higher proportion of children than national average, balanced by a lower proportion of old people) nor is it explicable by lack of employment opportunity (the region is within commuting distance of Australia's largest concentration of jobs). It remains a puzzle which to which this paper will return. (The other metropolitan areas have cognate LGAs, such as Dandenong in Melbourne, but these are pockets much smaller than the broad swathe of Mid-Western Sydney.)

National average earned income per capita is estimated at $37,000 for 2018-19. By this measure the richest region was the ACT, with earned income per capita of $61,000. Here high income per jobholder outweighed an average jobholding rate. In several other metropolitan regions high income per jobholder combined with high jobholding rates to generate high earnings. These regions were Central Perth and the centre of Sydney and its suburbs to the north and east. Earnings in the central regions of Melbourne, Adelaide and Brisbane were lower those in and outer suburbs generally were lower again. Once again the Mid-West of Sydney deserves a special mention for its low earned income per capita ($27,000), due to a combination of low jobholding rates and low pay. However, by this measure the poorest region was Wide Bay Burnett at $22,000 per capita. Lying north of the Sunshine Coast but south of the mining regions, Wide Bay Burnett housed a high proportion of retirees and earnings per employed person were low. Indeed, per capita earned incomes were generally low along the retirement coasts, extending into the hill-change retirements regions of Victoria. Except in WA they were also lacklustre in non-metropolitan regions generally.

Disposable income

Earned income is the major income source for most Australian households, but it is not the only source, nor is all of it available to support household expenditure. Allowing for this, the ABS has constructed a further concept, called household disposable income. This comprises earned income minus income tax minus contractual interest payments plus income from property (including the imputed rent of owner-occupied dwellings, after depreciation) plus social security benefits plus employer contributions to superannuation. Of these elements, the income tax and social security originated as sources of egalitarian redistribution but over the years have gradually become instruments of transfer from the middle-aged to the elderly. The other elements in household disposable income – property income, superannuation supplements and imputed rents – also tend to favour the elderly.

Though the calculations by which one gets from earned income to disposable include both additions and subtractions, the additions predominate. At $47,000 per capita in 2018-19, national disposable income was 27 per cent greater than earned income. The relative increase was greatest in the retirement regions, especially those along the NSW coast. It was also rather large in the ACT, reflecting generous superannuation entitlements. The percentage increase was least in two regions – the Pilbara/Kimberley with its young population with low social security and property income entitlements, and (more surprisingly) in the City of Melbourne, which again had a young population including a great many students who receive little or nothing in the way of social transfer or property

incomes. The student population also depressed disposable incomes in other centres of higher education.

This said, the regions identified as rich and poor by disposable income per capita were not, in 2018-19, very different from those identified using earned income or for that matter using GRPR per capita. The poorest region was again Wide Bay Burnett ($34,000 per capita) and the richest was again the ACT ($89,000 per capita). By this criterion the ACT was well ahead of central Sydney at $72,000 per capita, but this was still well ahead of the national average, along with disposable income in Darwin, Central Sydney, Central Perth and the WA Wheatbelt. Regions with low disposable income per capita included the Mid-West of Sydney and parts of Melbourne, notably the Outer North and the City of Melbourne itself.

This completes a quick review of poor and rich regions as identified from average incomes as estimated by cobbling together surveys and administrative sources including tax and Centrelink statistics. Much of the work is done on a regular basis by the ABS, with NIEIR interpolating the gaps. Though subject to adjustment, the data are timely and include detail by income source. They can readily be related to industry productivity – a major advantage from the point of view of economic development planners. However, the data can only be analysed by totals and averages and therefore yield no estimate of the number of poor people, or of the number of rich people, in any region. There are two possibilities. The first is by generalisation of income surveys. The sample size in such surveys, including the ABS income survey and the HILDA survey carried out by the University of Melbourne, is too small to yield direct estimates at the regional level, but it would be possible to construct such estimates by microsimulation. This approach would give a detailed account of the effect of national trends on regional incomes, but would not allow for region-specific factors. The second alternative is to resort to the Census income question. The rest of this paper is based on this approach.

Personal income as reported at the Census

To quote the Census form, 'information from this question provides an indication of living standards in different areas' – in other words, it helps to identify rich and poor regions. The 2016 Census income estimates derive from a single 'tick-a-box' question. Each Census respondent faced the choice of 15 boxes, ranging from negative income to income above $3000 a week, and was instructed not to deduct tax, superannuation, salary sacrifice or any other automatic deductions, and to include wages and salary income (including regular overtime, commissions and bonuses), government pensions, benefits and allowances, profits or losses from unincorporated businesses, rents, superannuation, private pensions, child support, interest, dividends, workers' compensation and any other regular source. These instructions are precise enough, but respondents were left to their own devices to make the necessary estimates – there was no interviewer to harry them into producing wage slips and remembering incidental incomes.

The Census income data was generated by millions of respondents, 91 per cent of whom managed to tick an income box. Accordingly, in so far as it was filled out accurately, the Census provides observations of income which are valid down to small geographic areas, not to speak of small demographic units. In its review of Census data quality, the ABS observed that Census respondents sometimes forgot to report small, irregular income sources and also that some of them, contrary to the instruction on the Census form, failed to include government pensions or asset returns as income (ABS 2944.0). In other words, there was a downwards bias in the Census estimates, but it was not

particularly serious and was likely to be so widespread that it had little effect on regional relativities. As to data quality, Bruce Bradbury of the University of NSW has carefully compared the results of the Census question with survey data for working-age men and reports that, provided one is careful to align the definitions, the two sources yield very similar distributions (Bradbury 2016, 2018).

Because the Census income data were collected by ticking boxes, of which the bottom and the top boxes were open-ended, they do not identify very high incomes, lumping them together with moderately high incomes in the open-ended top box. This means that the Census has nothing to contribute to current arguments about whether or not the benefits of recent economic growth have been cornered by the very rich. A further drawback is that it is not possible to calculate the average income of any group of Census respondents, nor is it possible to calculate Gini coefficients. These are severe handicaps to those of us who are in the habit of using averages to compare groups and Gini coefficients to measure inequality. However, medians, deciles and inter-decile ranges are still available.

When individuals are arrayed by personal income, in 2016 the first 10.4 per cent of all Australians aged 15 and over had negative or zero incomes. This means that the 10th percentile of the distribution occurred at zero income. One-third of these people with zero or negative incomes were aged 15-19 and presumably dependent on their parents. At the other end of the distribution, the 90th percentile occurred at an income of $1931 a week, which was approximately 23 per cent above the average weekly total earnings of full-time workers at the time of the Census and only 14 per cent above the average weekly total earnings of men who worked full time. This reinforces the point that the Census income data is not of much use to analysts interested in high-flyer incomes.

The median Census income in 2016 was $662 a week, which as it happens was just under the then minimum wage of $673 a week for an adult working full time. Indeed, given that the Census estimate is likely to have a small downward bias, the two may be taken as equal, which implies that roughly half the population aged 15 and over received a weekly income at or above the minimum wage while the other half received less. People with incomes less than the minimum wage included most of those who did not have a paid job (many of whom, including a large number of age pensioners, would have received social security payments), some were students and some were 'dependents' who relied on income received by other household members. Decades ago the typical dependent was a married housewife but nowadays dependents are more usually young people. In addition, many part-time workers would have had incomes less than the minimum wage, along with people who worked full-time but were paid at less than the minimum adult wage. These included those paid at junior wage rates, those who worked in unprofitable businesses and those who worked under employment arrangements which undercut the minimum wage. People with incomes greater than the minimum wage would have included nearly all full-time employees, part-time workers working at wage rates high enough to compensate for their limited hours or with supplementary incomes from other sources, the proprietors of profitable businesses, successful investors and retirees with above-average superannuation.

Taking the proportion of adults (the population aged 15 and over) with personal incomes greater than the minimum wage as the indicator of wealth, a familiar pattern emerges. Across Australia the median proportion of adults receiving personal income above the minimum wage is (by definition) 50 per cent. In 2016 the highest proportion was 68 per cent (in the Pilbara/Kimberley and also in Darwin), the lowest (in Wide Bay Burnett) was 36 per cent. Other regions where personal incomes

were generally high included the Central Sydney and its northern and eastern suburbs and also the ACT. Other regions where personal incomes were generally low were the NSW North and South coast regions, North-West Tasmania and the Mid-West of Sydney. The relationship between the proportion of adults with incomes over the minimum wage and earned income per capita was fairly close ($r^2 = 0.71$); that with disposable income per capita not quite so close ($r^2 = 0.52$).

This analysis provides a basic understanding of how incomes varied by region but does not really address the question of relative living standards, primarily because the standard of living which can be extracted from any given income depends on the extent to which people pool their incomes. The more people club together to share expenses, the further their income will go. The next part of this paper takes this into account, at least in a rough and ready way, and accordingly maps the distribution of standards of living by region.

Household income in 2016

To quote the Census form again, 'information from this question provides an indication of living standards in different areas'. However, the data so far analysed are inadequate as a description of differences in living standards. There are two main reasons. First, living standards depend on the number of people dependent on any particular personal income. A given income yields a much higher standard of living when all of it goes to support the recipient's standard of living than when it has to be shared between the recipient and various dependents including children. Secondly, relative regional living standards depend on costs which vary by region, not only housing costs but also transport costs and supermarket prices. The second of these factors is difficult to analyse due to the complex relationships between geography, household incomes and the costs of inputs to living. The present paper puts all this in the too-hard basket. On the other hand, by switching the unit of observation from the individual to the household the ABS has already reclassified the Census income data to allow for the first factor, the effect of the (presumed) sharing of income between the members of households. The reclassification invoked a practical definition of the term 'household', totalled the incomes of the individuals in each household and then adjusted for household size. Needless to say the process was full of assumptions, but the assumptions were defensible as yielding a better approximation than the unadjusted estimates.

The household definition

Conceptually, a household is a group of people who share their ordinary living expenses – the traditional phrases are that they share the rent and eat out of a common pot. There is, of course, no guarantee that all household members benefit equally from this arrangement. The folklore is full of tales of husbands who drink or gamble their wages before the money gets home. Even so, a great deal of sharing takes place, particularly between parents and children. The assumption that incomes are shared within households comes closer to the mark than the assumption that standards of living depend on individual income.

In the practical Census definition, a household is a group of people who live in a private dwelling. In turn, the ABS states that a private dwelling is 'most often a house or a flat. It can also be a caravan, houseboat, tent or a house attached to an office or rooms above a shop.' (ABS 2901.0) By this definition, residents of non-private dwellings are not members of households. Non-private dwellings

include hotels, guest houses, boarding houses, religious and charitable institutions, boarding schools, defence establishments, hospitals and any other kind of communal dwelling. In 2016 approximately 9 per cent of the population were not household members, in most cases because they lived in non-private dwellings. (People who lived alone in a private dwelling were defined as single-person households.)

The ABS estimated household income from the Census by adding the incomes of household members. These additions were approximate, since the individual incomes added were not precise but were tick-a-box ranges. The ABS addressed this problem by awarding each household member with the estimated median income for the box which he or she ticked.

In 2016 approximately 9 per cent of persons aged 15 and over failed to answer the income question. These non-respondents were distributed over the household and non-household population. The presence of one or more of these non-respondents in a household prevented the calculation of total household income, as did the temporary absence of a household member aged 15 or more. Missing observations deleted 10 per cent of households from the household-level income data set.

Calculating household equivalised income

The concept of equivalised household income was first introduced to Australia by Professor R F Henderson in his work on poverty during the early 1970s. The Henderson poverty line has been updated and published ever since, in the process surviving considerable criticism. Critics asked simple questions. How much do a couple save when they move in together? How much does an extra child add to the expenditure required to maintain a constant standard of living? Henderson used a quite complex set of estimates derived from studies of household budgets, but over the years a simplified scale has come into general use, at least in wealthy countries. In this scale the cost of living is set at 1 for the first (or only) adult in the household (where an adult is a person aged 15 or more), increases by 50 per cent for each further adult in the household and increases by a further 30 per cent for each child in the household (Azpitarte and Kalb, 2019). On this scale, a household consisting of a man, woman and two children aged under 15 requires 2.1 times the income of a single adult household to maintain the same standard of living. This scale is obviously simplified – it takes no account of housing costs, or of the costs of workforce participation or the costs of disabilities. It is also rough and ready – do children's needs really increase by forty per cent when they turn 15? However, it summarises a great deal of work carried out in a variety of high-income countries over the past five decades and has the official status of OECD recommendation. At first sight, this OECD scale diverges from the Henderson scale by allowing greater relative costs for the second adult, but this occurs only because the Henderson scale makes separate allowance for the costs of participation in the paid workforce such as transport and appearance costs (child care costs were not covered). The Henderson relativities between a single-adult and two-adult household are similar to the OECD in two cases: that where both adults have paid work and that where neither have paid work. The divergence occurs only when the first adult is in the workforce and the second not. The male breadwinner and female housewife was still a common household type when Henderson conducted his poverty inquiry but is now relatively uncommon, which means that the OECD equivalence scale is as good as any, especially when applied to data (like the Census income data) which do not distinguish between people who go out to work and those who do not. (Azpitarte and Kalb's criticism of the simplified Henderson relativities is misplaced since they ignore these subtleties, and the

Melbourne Institute encourages this by not publishing poverty lines for households with two adults in the workforce).

Equivalised income is calculated by dividing total household income by the equivalence rating of the household. The median equivalised income per adult across Australia at the 2016 Census was $878 per week, with the 10th percentile standing at $342 per week and the 90th at $2059 per week. The relationship between personal incomes and equivalised income can be illustrated by taking a high-income example. A person receiving personal income at the 90th percentile of the personal income distribution and living alone had an equivalised income of $1931 a week, a little below the 90th percentile of equivalised income for all households. If that person was the sole earner of a couple without children, the couple's equivalised income was $1287 a week. Add two young children, and the household's equivalised income was $920 a week – still comfortably in the top half of the distribution of equivalised incomes. Where a couple without children both received personal incomes at the 90th percentile of the personal income distribution, their household income was well over the 90th percentile of equivalised income. At the low end of the distribution, a person receiving personal income at the median of the personal income distribution and living alone had an equivalised income of $662 a week, definitely in the bottom half of households by equivalised income. If that person was the sole earner of a couple without children and not eligible for any form of social security assistance, the couple's equivalised income was $441 a week. Add two young children and the couple's equivalised income was $498 a week, $183 a week of which came from Family Tax Benefit Part A – which indicates that, at incomes around the minimum wage, Family Tax Benefit made an important contribution to the incomes of families with children. To the extent that such families forgot to include Family Tax Benefit when they ticked their Census income box the results are downwardly biased. However, the probability of such mistakes is likely to be similar from region to region, so that the errors do not vitiate inter-regional comparison.

In 2016, people living alone and receiving either the Age Pension or Disability Support Payment with no other income had personal incomes of $438.50 a week. Since they were living as single-person households, their equivalised incomes were also $438.50 a week. Couples with no other income and eligible for the Age or Disability Support pensions received personal incomes of $330.60 a week each, yielding an equivalised income for the couple of $ 440.80 a week – very similar to the equivalised income of a couple solely dependent on one full-time minimum-wage job. All of these incomes were well above the 10th percentile of equivalised income of $342 a week.

If pensioners had incomes which placed them safely above the 10th percentile of equivalised income, what households fell into this bottom 10 per cent? These unfortunate households included recipients of the low-rate social security benefits (Newstart Allowance, Youth Allowance, Austudy, Farm Household Allowance, Sickness Allowance and several other Centrelink payments), households solely dependent on part-time work, particularly if at low wage rates, proprietors of loss-making businesses, and households whose financial investments had gone sour. These would include wealthy households who considered their incomes negative due to capital losses from investments in shares or property. There is also the possibility of understatement of income. As the ABS notes, some of the low incomes reported at the Census were due to the respondent's failure to count pension or asset income as income (ABS 2944.0).

The standard of living low-rate beneficiaries and of low-rate part-time workers is undoubtedly low, indicating the success of recent Commonwealth policies to remove hindrances to the downward flexibility of wages. It is less certain that those who suffer business losses incur real hardship, since many of them have assets to cushion the blow, perhaps because they are in a cyclical industry where losses are inevitable in bad years. In 2016 1.8 per cent of all households reported nil or negative incomes while 8.2 per cent reported positive incomes below the 10th percentile. Both groups included households with low standards of living, but it is more likely that the zero to negative income group had wealth to offset their low incomes. The national average proportion of households with negative or zero incomes was exceeded in just 11 of the 67 regions used in the NIEIR analysis: Perth Central, five in Melbourne (Melbourne City and the four regions which abutted Melbourne City) and five in Sydney. As in Melbourne, in Sydney the proportion of zero and negative income households was highest in the metropolitan core region and was also above national average in the well-established suburbs including the Mid-West (despite its generally low incomes) but excluding the Outer North Shore (despite its generally high incomes). This association of zero and negative income households with established suburbs which have experienced house price booms suggests that in these regions zero or negative incomes were associated with property speculation. Accordingly the proportion of households with equivalised incomes above zero and less than the tenth percentile is to be preferred as an indicator of households with low standards of living. This aligns with the poverty studies, which have generally excluded zero and negative income households from their calculations.

The Census is not a poverty survey any more than it is a wealth survey. Though the process of adjusting from personal incomes to equivalised household income is the same as the process of adjusting income to assess the incidence of poverty, the tick-a-box method of collection of income is too approximate to allow accurate estimation, especially for households where the poverty line hovers near the boundary of one or other of the tick-boxes. Even so, when using the Census data as an indicator of the geographic distribution of very low incomes it helpful to remember that, in 2016, when the 10th percentile of household equivalised income stood at $342 a week, the simplified Henderson poverty line (as updated by the Melbourne Institute of Applied Economic and Social Research) for a single person living alone was $512.70 a week, for a couple was $342.95 a week, for a couple with two children was $458.57 a week and for a single parent with one child was $506.31 a week. Except for a couple without children, these poverty lines were all well above the 10th percentile. Estimates of the number of households with Census equivalised incomes above zero but less than the 10th percentile accordingly underestimate the number with incomes less than the Henderson poverty line, especially for single people and single parents.

Though they apply poverty lines to household income, recent survey-based estimates of the incidence of poverty have been published in terms of numbers of individuals with household incomes below the poverty line rather than numbers of households. The Census-based estimate that, in 2016, 8.2 per cent of households received very low incomes is therefore not comparable with the survey-based estimate that approximately 8 per cent of the population received incomes below the Henderson poverty line. Households with very low incomes tend to be smaller than households with incomes above poverty level. Adjusting the Census-based estimate for household size yields a very rough estimate that, in 2016, 5.7 per cent of the population lived in households with very low incomes. The 10th percentile thus amounts to a very austere poverty line, particularly for single

people (the Age Pension, at single rate, was above the 10th percentile but below the Henderson poverty line).

Regions with high standards of living

Insofar as high equivalent income supports a high standard of living, the proportion of a region's households with equivalised incomes above the 90th percentile identifies prosperous regions. In 2016 the most prosperous region was Central Sydney, where 31.5 per cent of all households had equivalised incomes in the top decile. Other prosperous regions included Canberra, Darwin and the suburbs north, east and immediately west of the peak of prosperity in Central Sydney, but not the middle and outer western suburbs. The central regions of Melbourne, Perth and Brisbane were also prosperous, but not as markedly so. In all the metropolitan areas the outer suburbs were less prosperous than the centres: in the outer suburbs of Perth the incidence of prosperity was around national average while in the outer suburbs of Melbourne and Brisbane, as in those of Sydney, the proportions of prosperous households were well below the national average.

Outside the metropolitan areas, only one region, Pilbara/Kimberley, made it into the high income group. In the other resource-based regions the proportion of prosperous households was either close to national average or, as in the Hunter valley (as distinct from Newcastle itself), significantly below. The resource sector may have generated high labour productivity, but the rewards of productivity did not in general accrue to the residents of the resource-rich regions.

In 2016 the least prosperous region was Wide Bay Burnett, where only 3.2 per cent of households had equivalised income in the top decile. Other regions where high-income households were scarce included the ex-urban and retirement regions along the east coast, those rural and semi-rural regions which were undergoing structural change such as NW Tasmania and SA beyond commuting range of Adelaide and formerly industrial suburban regions, notably mid-west Sydney but also the northern suburbs of Adelaide North and the western suburbs of Brisbane.

Poor households: the poorest and least-poor regions

Turning to the low-income end of the distribution, very poor households can be identified as those with incomes below the 10th percentile excluding those with zero or negative incomes. Very poor households were more widespread than the rich – whereas the rich ranged from 3 per cent of all households in those regions in which riches were scarce to 32 per cent of households in regions where riches were common, the regional proportion of very poor households ranged from 4 to 16 per cent.

There were two major regional concentrations of very poor households. The first was notable for its high Aboriginal population and comprised the NT outside Darwin, extending south of the border into SA. Other remote and resource-based regions had poor Aboriginal communities, but they were not so preponderant and the proportion of very poor households was around the national average. The second very poor region was the opposite of remote and comprised the Mid-West of Sydney (Canterbury to Fairfield and Liverpool). The only other metropolitan region remotely like it was the Adelaide northern suburbs. Though there were LGA-level patches of poverty in the other

metropolitan areas, in size and depth of poverty the Mid-West of Sydney had no interstate equivalents.

It is notable that no ex-urban or lifestyle regions stood out as very poor – as explained above, age pensioners had equivalised incomes above the 10th percentile. However, the proportion of very poor households was above national average in several rural regions, including some bordering on lifestyle – the North and North West of Tasmania, Gippsland in Victoria, Wide Bay Burnett in Qld, SA beyond commuting distance of Adelaide and the Orana region of NSW.

Income segregation among metropolitan regions

Regions with low proportions of very poor households included Canberra, Darwin, central Brisbane and the inner suburbs of Sydney extending to the beaches and to the north. Just as it had no equivalent of Mid-West Sydney, Melbourne had no equivalent of the Sydney North Shore; all its regions were close to national average in their proportions of very poor households. In Perth the proportions were a little below national average, in South East Queensland generally a little below, in Adelaide a little above, and a little above in rural regions generally. In the inner parts of all five major metropolitan areas there were pockets of very low income households comprising single people or group households of unrelated individuals, very likely with a preponderance of students.

It can be objected that this contrast between the social segregation of Sydney and the relative social integration of the other metropolitan areas depends on the regional boundaries adopted in the *State of the Regions* reports and would disappear if LGAs were differently grouped. An alternative analysis was accordingly conducted at LGA level. Metropolitan LGAs were classified as high-income if less than 5 per cent of their households had very poor equivalised incomes, low-income if more than 10 per cent of households reported very poor equivalised incomes and middle income otherwise. In the **Sydney** metropolitan area there were eight high-income LGAs, of which five (Mosman, North Sydney, Ku Ring Gai, Northern Beaches and The Hills) were contiguous, two (Woollahra and Waverley) lay across the harbour from the north shore group and one (Camden) was isolated on the urban fringe. There were ten middle-income LGAs while the four low-income LGAs formed one contiguous group (Canterbury Bankstown, Cumberland, Fairfield and Liverpool). Though distanced from the metropolitan centre, this group was well within the metropolitan boundary and had been affected by the decline of manufacturing since the 1980s. **Melbourne** had one high-income LGA (Nillumbik, on the urban fringe), 27 middle-income LGAs and three low-income LGAS (Hume, Greater Dandenong and Brimbank). These three were scattered to three points of the compass but had all been affected by the decline of manufacturing. Because LGAs in **South East Queensland** were larger than in the other metropolitan areas, less variety would be expected. The region had no high-income LGAs, nine middle-income LGAs and one low-income LGA (Somerset, on the semi-rural fringe). By contrast, in **Adelaide** the LGAs were smaller than in Sydney or Melbourne. The metropolitan area had no high-income LGAs, 16 middle-income LGAs and four low-income LGAs, of which three (Playford, Port Adelaide Enfield and Salisbury) formed a contiguous belt of formerly industrial suburbs. The fourth, the City of Adelaide (yes, the very centre of the metropolitan area) seems to have been poor due to its student population. In **Perth** the LGAs were smaller again. The metropolitan area had five high-income LGAs grouped together in the Western (beach-side) suburbs (Cambridge, Claremont, Cottesloe, Nedlands and Peppermint Grove), 25 middle-income LGAs and no low-income LGAs.

This analysis emphasises the point that only Sydney boasts large tracts of both high-income and low-income areas. The high level of economic segregation in Sydney has traditionally been blamed on topography – the harbour view effect (Stretton 1970) – but it is likely that Sydney has also received more than an average share of the high incomes generated in the booming finance sector. Melbourne also participated in the finance boom, but in a more restrained way given its specialisation in superannuation and insurance. Brisbane, Adelaide and Perth, along with the country at large, missed out on the finance boom, but Perth seems to have captured significant income from the mining boom. These patterns help to explain the presence of high-income LGAs in Sydney, Perth and Melbourne and their absence in Brisbane and Adelaide. Of course, booms generally collapse. Indeed, the heady phase of the mining boom had passed well before 2016, but the resource rents generated in its aftermath are still buoying incomes in Perth. An income collapse is predicted when the finance bubble is finally pricked but if the collapse follows the pattern established in the USA in 2008 the losses will not undermine the relative prosperity of inner city residents (Brain and Manning 2017).

These comparisons confirm that Sydney Mid-West is unusual for its high incidence of poverty combined with large geographic extent and substantial population (over a million residents). It was noted above that demography does not explain the high incidence of poverty in Sydney Mid-West; region-specific factors seem to be involved, or perhaps a national failure to manage the down-sizing of manufacturing by providing alternative employment. It is true that a great many of the workers whose skills were rendered redundant by the economic reforms of the 1980s and 1990s left the workforce and became social security clients, but that was over two decades ago, and most of these de-skilled workers would now be receiving the Age Pension and hence not be accounted poor by the austere standards adopted here. However, de-skilling is still occurring and the current social security system is nastier to unemployed people than it was in the 1990s, hence de-skilling is more likely to result in poverty. Yet why such a concentration in Sydney Mid-West? In the other metropolitan areas there are pockets of poor households, but they are not nearly so large. Again, not all of the manufacturing-dependent regions of the post-war period continue to register the high poverty levels of Sydney Mid-West. On the fringes of the Sydney metropolitan area, the independent cities of Newcastle and Wollongong have noticeably less poverty than Sydney Mid-West, perhaps because their slightly more diversified economies were a little more resilient. Within the Sydney metropolitan area it is not at all surprising that commuting and gentrification have suppressed poverty in the formerly manufacturing inner-western suburbs. There has been similar gentrification in the former inner industrial suburbs of the other metropolitan areas, its strength depending on the level of growth of city-centre employment. It is also noticeable that the incidence of extreme poverty is relatively low in the outer suburbs developed from 1995 on, at a time when the finance sector was booming. Perhaps these also have a more diversified economic base, though it should be remembered that the Census equivalised income estimates make no allowance for housing and transport costs and it is likely that such allowance would increase the estimated incidence of outer-suburban poverty. This said, it is likely that factors additional to the decline of manufacturing have been important in concentrating poverty in Sydney Mid-West. Those factors could be related to the availability of rental housing, the high proportion of recent migrants and the general ethnic mix along with the limitations of commuter transport between the Mid-West and the major centres of job generation.

Social segregation outside the metropolitan areas

At the LGA level, if Canberra and Darwin are counted as metropolitan, only four non-metropolitan LGAs ranked as high-income in that at least 20 per cent of their households had equivalised incomes in the top 10 per cent of the national distribution. These four were small, remote shires involved with mining (Weipa, Qld and Ashburton, Perenjori and Port Hedland, WA). The surprising lack of high-income mining LGAs reflected the presence in these shires of households dependent on relatively low-income service occupations and the pre-emption of many of the high-income mining and construction jobs by FIFO workers and by temporary residents living in non-private dwellings. The first of these groups contributed to the high incomes in FIFO source areas while the latter group were excluded from the household population used in calculating equivalised incomes.

At the other end of the scale, really low-income LGAs could be identified as those with more than 15 per cent of very poor households. By this standard, there were 51 non-metropolitan LGAs with very low incomes (52 if one counts the single metropolitan LGA to meet this austere criterion, Fairfield NSW). The tally by state was as follows: none in Victoria, two in Tasmania (Break O'Day and West Coast, the latter a former mining area and the former in process of converting from fishing and smallholder farming to tourism and retirement), five in NSW (of which Kyogle and Tenterfield were former smallholder farming areas and the remaining three were inland, with significant Aboriginal populations), seven in SA (Peterborough, which has not recovered from the rationalisation of the railways, three marginal farming areas, Cleve, Karoonda and Wudinna, and three remote areas with significant Aboriginal populations), twelve in WA (some of them marginal farming areas but most of them remote and with significant Aboriginal populations), ten in the NT (all of which were remote shires with significant Aboriginal populations) and fifteen in Queensland (all of which were indigenous LGAs). With the possible exception of Peterborough, there is no LGA in this list equivalent to those metropolitan LGAs which are still struggling with the decline of manufacturing employment. Instead, there are LGAs affected by declines in mining and farming plus a large number with largely indigenous populations.

At the 2016 Census households identified as indigenous comprised 3.1 per cent of all households. The proportion of indigenous households with high incomes was low but far from insignificant: 4.3 per cent of indigenous households were in the national top 10 per cent by equivalised income. These high-income indigenous households were scattered across all regions and accounted for 10 per cent or more of all indigenous households in ten of the 67 regions. Five of these regions were in inner Sydney, three in inner Melbourne and the other two were NT Darwin and the ACT – mostly but not all regions with low indigenous populations and all of them generally prosperous. However, the general tendency was for indigenous households to be poor. Across the broad region comprising the NT outside Darwin, SA north and west of Port Augusta and WA outside the south-west corner – geographically more than half the country – more than a quarter of all Aboriginal and Torres Strait Islander households suffered very low equivalised incomes. In these rural or remote regions non-indigenous and indigenous people tend to live apart, the former in established homesteads or fleeting mining camps, the latter in 'communities' some of which are on the their residents' traditional lands but many of which are the sited as past government officials or missionaries thought fit. Many of the residents of these communities feel a duty towards their ancestral land which obliges them to forgo cash incomes. From the point of view of the capital-city business elite indigenous people should knuckle down and earn a living from whatever jobs the market provides, shifting location if necessary. To this end, and aligned with the niggardly treatment of unemployed groups in

general, the availability of social services in remote locations has been restricted, exacerbating poverty (Boyd and Venn, 2019). On the other hand, there are remote places where the Aborigines and others seem to be coming to a modus vivendi (Wright 2017, Martin 2019). Notably, these are places where, despite the obstacles to the development of small businesses in remote areas, indigenous enterprise has flourished.

The two regions with the highest proportions of very low income households seem to be poles apart. The NT outside Darwin is remote and its largest urban centre has a population of 25,000 while the Mid-West of Sydney lies at the geographic centre of Australia's largest metropolis. In 2016, 85 per cent of the very low income households in the NT outside Darwin were indigenous, compared with a mere 1 per cent in Mid-west Sydney. Do they have anything in common, apart from lots of households with very low incomes? Yes, they do. They are both family-oriented and in both the proportion of very low income households which comprise families with children is around double the national average. (The only other comparable region in this respect is Melbourne Outer North.) Again, both are favoured by groups outside the Anglo mainstream. In their poverty there is a hint of discrimination by the wider society (or at least by the governing elite) and also a hint of their residents' unwillingness to comply with the expectations of that elite.

Relationships between measures

This paper set out to identify measures of income inequality between regions, with an emphasis on equivalised household income as the preferred indicator. This indicator is not ideal – it is arguable that equivalised disposable income after housing costs would be better – but is readily available from the census. As compared with GNP-type methodologies which cobble different sources together it has the formidable advantages of being collected by a simple, direct question which is uniform across the country. It shares this advantage with individual personal income as also collected in the census but has the further advantage that it is adjusted for the sharing of income within households. Its major disadvantages are that it does not distinguish incomes by source and it is only available (so far) for the Census years 2011 and 2016. For these reasons, this paper did not address the question of trends over time. Given that changes in income distribution are notoriously slow, such a study would have to resort to series for which longer time periods than are available for the preferred indicator. It therefore makes sense to ask whether any of the other indicators considered can serve as proxies.

Equivalised and personal incomes

The first proxy would be Census personal incomes, derived from the question asked at each Census since 1976. In 2016, despite the adjustments required to calculate equivalised income – adding personal incomes and adjusting for household size – the regional pattern of personal incomes was closely related to the regional distribution of household equivalised incomes. It is easier to generate a high household standard of living in regions where personal incomes are high. In 2016, across the regions, the proportion of households with high living standards and the proportion with poor living standards correlated with the proportion of adults with personal incomes above the median, the former more closely than the latter (R^2 for high living standards 0.76, for low living standards 0.58.). It is not altogether surprising to find that personal incomes contributed more directly to high living standards than to poor living standards, the latter being more sensitive to household composition.

The regions where the proportion of personal incomes above the median under-predicted the proportion of households with high equivalised incomes fell into two groups. The inner regions of the Sydney, Melbourne and Perth metropolitan areas were even richer than would be expected from their high personal incomes, since their households were on average small and there were many high-flying incomes not captured by the proportion of personal incomes above the median. Outside the metropolitan areas the proportion of rich households was higher than expected in two regions with generally low personal incomes (the NT outside Darwin and Wide Bay Burnett) presumably again because of an upwards tail of high personal incomes, but also perhaps because people with moderately high personal incomes tended to join together to form high-income households.

Not surprisingly, regions where the proportion of personal incomes over the median over-predicted the proportion of affluent households were mostly outer suburbs, particularly those in Brisbane, Sydney, Melbourne and Darwin. In outer suburbs personal incomes tend to be watered down by large household size.

Turning to the low end of the distribution, the regions where the proportion of personal incomes above the median under-predicted the proportion of households with poor equivalent incomes again fell into two groups. They were the regions with high indigenous populations such as the NT outside Darwin and the Pilbara/Kimberley – regions in which low-income people tended to congregate to form low-income households. The other notably penurious region, Sydney Mid-West, was not known for a high indigenous population, but once again seemed to have more than the usual share of large households depending on relatively few and/or relatively low personal incomes. As noted above, there is a certain commonality between the position of Aboriginal people and that of some of the recent immigrant groups resident in Mid-West Sydney.

In two groups of regions the proportion of personal incomes above the median severely over-predicted the proportion of households with poor household incomes. The first group comprised retirement areas such as the Sunshine Coast. Were the low-income line raised from the very low level used in this paper to (say) the 20th percentile, the proportion of poor households in these regions would jump up. Not so in the other group of regions where the proportion of low personal incomes under-predicted household affluence. These were high-status outer suburbs such as the Sydney North Shore, where most of the residents who had low personal incomes would have been incorporated into otherwise high-income households.

Equivalised incomes and measures based on the national accounts

The good news for those seeking a measure of trends in regional inequality is that the relationship between residential gross regional product (as estimated by NIEIR and expressed per capita, GRPRpc) and equivalised household incomes is fairly close, in 2016 yielding a R^2 of 0.72 for its relationship to the proportion of high-income households and an R^2 of 0.53 for its relationship to the proportion of households with very low incomes. As with the relationship between personal and equivalised incomes, the correspondence was closer for high incomes than for low, again due to the greater influence of household composition at low equivalised incomes.

The pattern of deviations is instructive. In 2016 there were two groups of regions where GRPRpc under-predicted the proportion of rich households. The archetype of the first group was the NT outside Darwin, but the group also included the Pilbara/Kimberley and outback SA. In this group of regions GRPRpc under-predicted not only the proportion of rich households but also the proportion of very poor households. In other words, these regions, with their mix of rich miners and poor Aborigines, suffered considerable internal inequality.

The archetypes for the second group were central Sydney and Melbourne but the other mainland state capitals and Darwin were also included. As in the remote areas there was evidence of internal equality, particularly in areas with student populations, and more generally the city centres and the gentrified inner suburbs had more rich residents than their GRPRpc would indicate (in technical terms, their distributions of equivalised income were skewed upwards, perhaps in association with small household size). A second possible reason why the city centres had more high income residents than their GRPRpc would indicate could that the algorithms which NIEIR uses to estimate the distribution of Gross State Product to regions awarded too small a share of GSP to the city centres and too much to the suburbs and rural regions. There was evidence for this in NSW, where incomes in the centre of Sydney were higher than GRPRpc predicted and those elsewhere were lower.

Two other regions where equivalised incomes differed from those predicted by GRPRpc are worth noting. The first was Sydney Mid-West, where for reasons already discussed the proportion of very poor households was much higher than expected. The second was Canberra, where the proportion of rich households was less than expected. One possible explanation is that the public service offers better opportunities for second income earners in households than the private market offers elsewhere, hence raising the proportion of households with high equivalised incomes without unduly raising GRPRpx.

The relationship between equivalised income and the other national accounts measures considered in the first part of this paper – disposable income per capita, wages and mixed income per capita – was also investigated but found to be less close than the relationship with GRPRpc. In both cases the patterns of deviations from expectation were similar to the pattern established by GRPRpc.

Conclusion

Since the days of Professor Henderson's poverty inquiry in the 1970s, the preferred measure of income inequality has been disposable income adjusted for family or household size and for housing costs. Various national sample surveys have been conducted which allowed estimation of one or another approximation of this ideal, but unfortunately these cannot be directly used for studies of regional differences, since they do not yield statistically significant estimates at regional level. The two main sources of income data valid at regional level are the Census income question and the various administrative sources which are cobbled together to yield national accounts data.

An obvious starting point is the National Accounts data as imputed to regions by the National Institute of Economic and Industry Research in its annual *State of the Regions* reports. These data have the important attribute of connecting regional household incomes to regional economic development and output. They provide answers to such questions as 'What does a new mine

contribute to regional incomes?' However, they are not quite so good at answering questions related to social welfare, such as the incidence of low and high incomes. A better source here is the Census.

Since 2011 Census data have been available for the income of private households adjusted for household composition. The reference is to income before tax, including social security benefits but without adjustment for housing or other location-specific costs, so the data are not ideal. Nevertheless, they form an excellent starting point and prove conclusively that there are significant regional differences in income-based standards of living.

The policy significance of regional income differences are disputed. To political actors steeped in the American traditions now widely prevalent among Australia's business and media elite, differences in regional incomes are acceptable provided they are market-based and therefore, it is argued, constitute incentives to the efficient distribution of labour and other resources. If they generate community dissatisfaction, so much the better – this indicates their strength as incentives to geographic and social mobility. To maintain the incentive structure, it may even be necessary to intensify police surveillance. However, these are extreme views and outside the right-wing American tradition regional differences are more than just incentives to desirable migration.

It is fair enough to point out that some regional differences are the regional expression of income differences which are acceptable from a national point of view. It is acceptable that there should be rewards for hard work and skill, and many Australians would perhaps add a role for inequalities due to small-scale gambling. However, from an economic point of view it is hard to accept inequality deriving from other than frictional unemployment of labour (in other words, wasted resources) or from the private capture of economic rents (but with differences of opinion as to what particular incomes are economic rents). Egalitarians would add inequalities due to lapses from equality of opportunity and failures to provide minimum standards of living for all. The idea that regional inequalities constitute a desirable incentive to internal migration also has severe limitations – migration can be costly as housing and other capital assets are abandoned and rebuilt elsewhere (or on the same site, as when migration to the gentrifying suburbs requires demolition and rebuild) and is decidedly costly in terms of community disruption. Herein lies the case for regional development policies.

The difficulty in evaluating differences in regional incomes can be illustrated by the case of central Sydney. The high incomes received by residents of city centres, particularly in Sydney may be rewards of the knowledge economy, in which case it behoves public policy to do all it can to reduce housing costs in areas with access to the city centre, to increase commuting capacity into the city centre, and to attempt to clone the city centre elsewhere, as in Parramatta. On the other hand, it may be that many city-centre high incomes constitute economic rents generated especially in the finance and mining sectors. (In classical economics, a 'rent' is any payment to the owner of an input to production in excess of the costs of production of that input. Classical examples include monopoly profits, the rent of land and resource rents. Economic rents are problematic for those who defend capitalism on efficiency grounds.) The classical remedy here is progressive taxation.

Whatever the status of city centre incomes, there are two regions prompting particular concern. They are the Northern Territory outside Darwin and the Mid-West of Sydney. At first glance the remote Territory and the old stomping grounds of Whitlam and Keating have little in common, but both have high proportions of households on very low incomes. There have been failures to ensure

that suitable employment is available and failures to guarantee a minimum standard of living, especially for families. These failures can be traced back to American-inspired labour market and social security policies such as the white-anting of Award wage rates and the insistence that low rates of benefit to maintain the incentive to work even at white-anted wage rates. These are regional effects of national policies, but it is likely that regional policies have also have contributed – for example, policies on the regional delivery of public services like education, policies on infrastructure investment and policies at industry level, both the easing of transitions out of declining industries and the fostering of new industries. The background data are there and there is scope for regionally-focussed studies.

The link between regional inequality as documented by Census equivalised household income and gross regional product (residential) per capita also opens the way to studies of the time path of regional inequality. The data are available; it remains but to use them.

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