

**Permanent Income Inequality:  
Australia, Britain, Germany, and the United States Compared\***

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**Abstract**

A common critique of most measures of income inequality, which are based on a single year's income, is that they fail to take account of income mobility. If income fluctuations are large, and individuals can smooth consumption, then high inequality and high mobility may be no worse than low inequality and low mobility. To test this, I use panel data from four countries – Australia, Britain, Germany and the United States – and estimate measures of permanent income inequality that are based on income averaged over multiple years. I find that: (1) using pre-government income, annual inequality and permanent inequality have grown in Germany and the US, while post-government income inequality has grown in the US; (2) comparing levels of annual post-government income inequality across countries, the ranking was the US, Australia, Britain, Germany; (3) comparing levels of permanent income inequality across countries, the ranking of triennial post-government inequality in the most recent year was the US, Australia, Germany, Britain; (4) in the most recent year, the most mobile country was Australia, while the least mobile was Germany. However, as a comparison of points (2) and (3) demonstrates, mobility had little effect on the overall rankings.

**Keywords:** permanent income, income distribution, Australia, Britain, Germany, United States

**JEL Codes:** D31, H23, N30, J62

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\* The Australian results shown in this paper use confidentialized unit record data from the Household, Income and Labour Dynamics in Australia (HILDA) survey. Researchers using HILDA are required to acknowledge that the HILDA Project was initiated and is funded by the Commonwealth Department of Family and Community Services (FaCS) and is managed by the Melbourne Institute of Applied Economic and Social Research (MIAESR), and to note that the findings and views reported in this paper are those of the author and should not be attributed to either FaCS or the MIAESR. I am grateful to Bruce Headey and Mark Wooden for advice on HILDA income measures. All remaining errors are my own.

## 1. Introduction

Empirical research on the distribution of resources has tended to focus almost exclusively on inequality of annual income. While this has the virtue of simplicity, rarely is any theoretical justification given for the choice of one year as the period over which income is to be recorded – rather than, for example, one month, or three years.

In part, these gaps have been filled by two parallel literatures: one on income mobility, and another on wealth inequality. However, if we believe that what matters is average income over several years, then it may be useful to directly observe patterns of permanent income inequality across countries and over time.

The focus of this paper is on patterns of permanent income inequality in four developed countries: Australia, Britain, Germany and the United States. Using comparable panel datasets from these four countries, I estimate measures of “permanent income inequality” – defined as average income over a two to ten year period – using two income definitions, pre-government income and post-government income.

To preview my findings, I find that annual inequality and permanent inequality have grown in Germany and the US during the 1980s and 1990s, while post-government income inequality has grown in the US. In Britain, both measures remained fairly flat over the 1990s. Using data from the most recent available year, a comparison can be made of inequality across these four nations. On a standard one-year measure of post-government inequality, the countries are ranked (from most to least unequal): the US, Australia, Britain, Germany. Mobility does differ between the countries, with the countries ranked (from least mobile to most mobile): Germany, Britain, the US, Australia. However, differences in mobility have only a modest effect on the annual inequality rankings. Comparing three-year post-government inequality, the ranking is (from most to least unequal): the US, Australia, Germany, Britain.

The remainder of this paper is structured as follows. Section 2 argues that permanent income inequality can make a useful addition to our conception of income inequality. Section 3 outlines the key features of the data series used in this analysis, and the methodology. Section 4 presents the results, and the final section concludes.

## **2. Why permanent income inequality?**

Choosing the right inequality concept depends crucially on the question that the researcher sets out to answer. Five types of inequality are:

1. Individual-level consumption or expenditure inequality (typically averaged over a week or month)
2. Individual-level earnings inequality (often based on hourly wages, weekly earnings, or monthly earnings)
3. Annual inequality among households
4. Permanent income inequality (average income over a two to ten year period) among households
5. Wealth inequality among households

Each of these inequality concepts has its particular advantages. If we want to know about the immediate material circumstances of the rich and poor, consumption inequality matters most. If we are interested in the effects of labor market reforms, earnings inequality is a natural place to begin. For a study of tax reforms in a country where returns are filed once a year, annual inequality is most relevant. With well-functioning credit markets, permanent income inequality provides a benchmark for the enduring gaps between rich and poor. And wealth inequality is the natural concept to turn to in any consideration of policies that affect bequests.

Outside these examples, however, there are many other issues upon which the “right” measure of inequality is less evident. Some instances in which the optimal measure of inequality is likely to be permanent income inequality are:

- **Savings and inequality:** Since savings rates typically depend on permanent income, it is the distribution of permanent income that should have the greatest impact on savings behavior (for a survey of the literature on savings and inequality, see Thorbecke and Charumilind 2002).
- **Educational inequality:** If children face limits to borrowing for college, those from families with higher levels of permanent income will be more likely to attend university (see Jencks 2002).
- **Health and inequality:** Two of the channels through which inequality is said to affect health are relative deprivation and health expenditure. Both of these will be largely driven by inequality in permanent income. Other potential channels are more likely to be affected by different types of inequality (for a review of this literature, see Deaton 2003).
- **Happiness and inequality:** Alesina, DiTella and MacCulloch (2001) point out that inequality should have a more negative impact on happiness in countries with low social mobility, all else equal. Implicit in this is that when considering the relationship between inequality and life satisfaction, permanent income inequality or wealth inequality will most probably be a better measure than inequality of annual incomes.
- **Politics and inequality:** Keefer and Knack (2002) argue that inequality has a negative impact on the legal infrastructure, since it acts as a form of polarization. Polarization leads to divergent preferences in a community, and this causes both parties to underinvest in the legal system. Again, the form of inequality that is most likely to drive political preferences will be permanent income inequality or wealth inequality, rather than annual income inequality.

More generally, Milanovic (2003) argues that the main reason that economists should care about inequality is because, for many individuals, the average income of those in their peer group enters (negatively) into their utility function. Over what period are individuals likely to observe the incomes of their peer group? While it is possible that year-to-year fluctuations in peer group incomes affect individual utility, it seems likely that permanent income or wealth matter most.

Several studies have compared permanent income inequality across developed countries. Burkhauser and Poupore (1997) estimate mobility and permanent income inequality measures for Germany and the United States in the period 1983-88, and conclude that the US has both higher inequality and lower mobility. Similarly, Aaberge et al (2002) use data from 1980-90, and find that Denmark, Norway and Sweden have lower levels of permanent income inequality than the US. The present paper is in a similar spirit to these papers, though it aims to compare permanent income inequality at more than one point in time.

Three other literatures are related to this exercise: cross-country comparisons of individual earnings mobility (eg. Atkinson, Bourguignon and Morrison 1992; Fields 2002; Fields et al 2005); cross-country comparisons of household income mobility rates (eg. Jarvis and Jenkins 1998; DiPrete 2001; Luttmer 2002; Van Kerm 2004); and cross-country comparisons of income inequality (for surveys of the differences among developed nations, see Gottschalk and Smeeding 1997; Brandolini and Smeeding 2005).

### **3. Data and methodology**

The data used in this paper are drawn primarily from the Cross-National Equivalent Files (CNEF) compiled by researchers at Cornell University. The CNEF attempts to make comparable four panel surveys – the Panel Study of Income Dynamics (PSID), the German Socio-Economic Panel (GSOEP), the British Household Panel Study (BHPS), and the Canadian Survey of Labour and Income Dynamics (SLID).<sup>1</sup> For background on the CNEF, see Burkhauser et al (2001). The present study does not include data from the Canadian SLID, but it is hoped to incorporate Canada in a subsequent draft.<sup>2</sup>

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<sup>1</sup> The German sample covers West Germany only from 1984-89, and was enlarged to also cover East Germany from 1990 onwards.

<sup>2</sup> Unlike Britain, Germany and the US, Canada does not supply researchers with the microdata from its panel survey. Instead, researchers must email a Stata do-file to Statistics Canada, where it is processed and the results returned. To the bemusement of both Statistics Canada and myself, the same file that runs on the other three panel data surveys produces bizarre error messages when run north of the 42nd parallel.

I use two of the income variables from those files – pre-government income, and post-government income. So far as possible, the researchers have attempted to make post-government income comparable across the countries in the CNEF (see Burkhauser et al 2004 for more details on post-government income). Precise definitions of the two income variables for each of the countries in this analysis are provided in the Data Appendix.

For Australia, which is not yet part of the CNEF, I use the Household, Income and Labour Dynamics in Australia (HILDA) survey, a household-based panel study which began in 2001. In place of the pre-government and post-government income variables in CNEF, I use private income and disposable income in HILDA. For more details on these two variables, see Watson (2005).

In estimating permanent income inequality, it is necessary to restrict the sample to contiguous years. Since the PSID shifted to biennial data collection after 1997, our US sample stops in that year. The sample period for the four surveys is 2001-03 for Australia; 1991-2002 for Britain; 1984-2003 for Germany; and 1980-1997 for the US.

In estimating household income, it is necessary to make some adjustment for household size, an issue upon which there is little consensus in the literature (Nelson 1993; Creedy and Sleeman 2004). I apply a simple equivalence scale (used, among others, by the Luxembourg Income Study), in which total household income is divided by the square root of the number of household members.

Permanent income is then calculated for each individual, by averaging their equivalized household income across two or more years. Changes in household income from year to year can arise from two factors: changes in the incomes of household members, or changes in household composition. If an individual moves from one household to another, then so long as they are successfully followed by the panel survey, this method will encapsulate the change in household income that results.

One point is worth noting about this methodology. Unlike Burkhauser and Poupore (1997), I do not restrict the sample to individuals with non-missing income in every year. While such an approach is appropriate to a comparison of two countries' income mobility over the same time interval, the present approach allows comparison within countries over time, as well as between countries where the length of the panel survey differs. Survey weights are used in all analyses.

Table 1 presents summary statistics for household size and the two income measures used in the analysis. In all cases, the standard deviation of pre-government income is larger than the standard deviation of post-government income. In all cases, the gap between pre-government income and post-government income is smaller than might be expected (indeed, in Britain, post-government income is actually higher than pre-government income). This is due to the fact that household incomes are divided by the square root of the number of household members, which means that an income transfer from a larger household to a smaller household raises the average size-equivalized household income.

<b>Table 1: Summary Statistics</b>		
	<b>Mean</b>	<b>SD</b>
<b><u>Australia 2001-2003 (N=20,103)</u></b>		
Pre-government income (A\$)	29375.04	33009.08
Post-government income (A\$)	25656.19	20965.81
Household size (persons)	3.312	1.590
<b><u>Britain 1991-2002 (N=35,352)</u></b>		
Pre-government income (£)	12261.38	11838.34
Post-government income (£)	12450.8	7706.58
Household size (persons)	2.768	1.344
<b><u>Germany 1984-2003 (N=52,263)</u></b>		
Pre-government income (€)	17467.85	16695.02
Post-government income (€)	15546.52	9610.55
Household size (persons)	2.890	1.395
<b><u>United States 1980-97 (N=39,458)</u></b>		
Pre-government income (US\$)	21821.65	26995.74
Post-government income (US\$)	17771.42	17087.65
Household size (persons)	3.241	1.567

**Note:** Sample sizes are the number of persons whose pre-government income was recorded in at least one year of the survey.

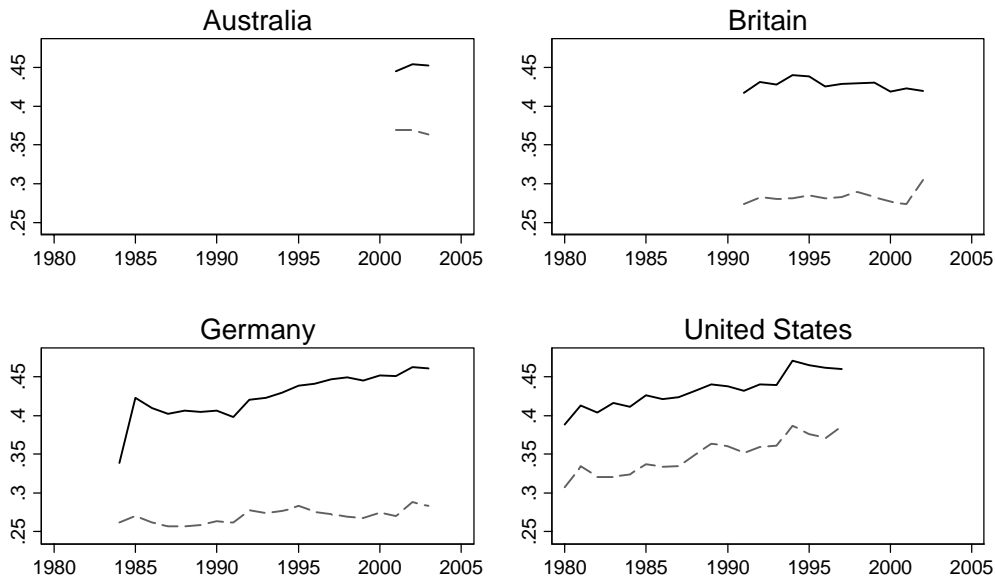
#### **4. Permanent income inequality in four countries**

To begin, I estimate annual income inequality using pre-government and post-government income. For simplicity, all results that follow are shown for the gini coefficient. Tabulations by other inequality measures are available from the author upon request.

Figure 1 shows the results for each of the countries in the sample. With the exception of Germany in the early-1980s, the gini for annual pre-government inequality in all these countries is between 0.4 and 0.45. For post-government annual income inequality, however, there are larger differences across countries: in Britain and Germany, the ginis are below 0.3, while in Australia and the United States they are above 0.3. So far as the trends are concerned, the Australian panel is too short to discern any trends. For Britain, annual pre-government inequality is essentially flat over this period, while annual post-government inequality is mostly flat, with a slight uptick in the early-2000s. For Germany and the United States, annual inequality rose steadily through the 1980s and 1990s, though in the case of Germany, post-government inequality rose less steeply.



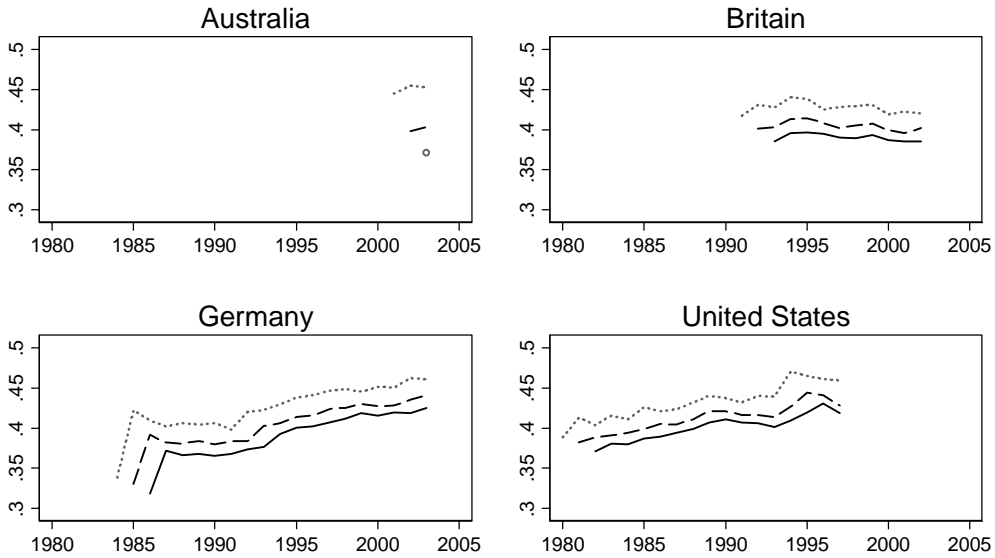
Figure 1: Annual Income Inequality  
(Gini Coefficient)



Solid line denotes pre-government income; Dashed line denotes post-government income

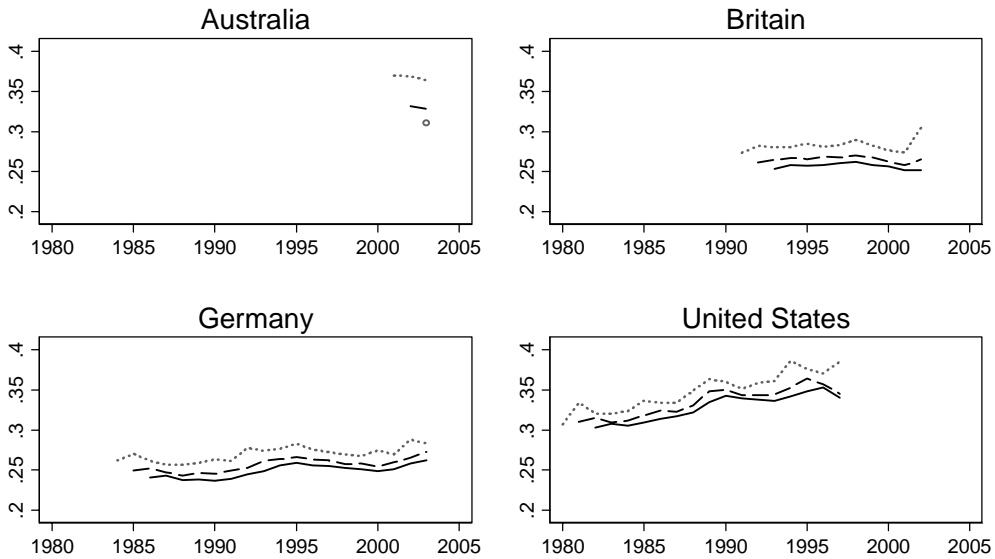
In Figures 2 and 3, I estimate permanent income inequality, as measured by the gini coefficient for two-year and three-year income. For the purposes of comparison, results are also shown for one-year income. The gap between these lines reflects the degree of mobility in each society – the extent to which averaging income over multiple years reduces the gini coefficient. The trends in biennial and triennial inequality are similar to those for annual inequality – rising in Germany and the United States, and flat for Britain. It is notable, however, that in the case of Germany, government policies muted somewhat the effects of the market, with biennial and triennial pre-government inequality rising much more sharply than equivalent measures for post-government inequality.

Figure 2: Two-Year and Three-Year Income Inequality  
(Gini Coefficient for Pre-Government Income)



Dotted line denotes annual inequality. Dashed line denotes two-year inequality.  
Solid line (circle for Australia) denotes three-year inequality.

Figure 3: Two-Year and Three-Year Income Inequality  
(Gini Coefficient for Post-Government Income)



Dotted line denotes annual inequality. Dashed line denotes two-year inequality.  
Solid line (circle for Australia) denotes three-year inequality.

Figures 4 and 5 repeat this exercise, but now for five-year income and ten-year income (plotted alongside annual inequality, for comparison purposes). Again, the trends are qualitatively similar to those for biennial and triennial inequality, with permanent pre-government income inequality rising in Germany and the United States and flat in Britain, and permanent post-government inequality rising only in the United States, but flat in Britain and Germany. Because the Australian dataset only covers three years, we cannot estimate these measures for Australia.

Figure 4: Five-Year and Ten-Year Income Inequality (Gini Coefficient for Pre-Government Income)



Dotted line denotes annual inequality. Dashed line denotes five-year inequality. Solid line denotes ten-year inequality.

Figure 5: Five-Year and Ten-Year Income Inequality  
(Gini Coefficient for Post-Government Income)



Dotted line denotes annual inequality. Dashed line denotes five-year inequality. Solid line denotes ten-year inequality.

How does the level of inequality compare across these countries? To see this, I compare pre-government inequality and post-government inequality around 1990 (excluding Australia) and in the most recent year. Figure 6 shows these measures for annual income inequality. In 1990, the pre-government annual income inequality ordering (from most to least unequal) was the US, Britain and Germany. After taxes and transfers, this ordering remained unchanged.

In the most recent year, annual pre-government inequality was almost precisely the same in Australia, Germany and the United States, with Britain having a slightly more equal distribution of market income. Government policies then produced a much more clear inequality ordering (from most to least equal): US, Australia, Britain, Germany.

Figure 6: Comparing Annual Inequality (Gini Coefficient)

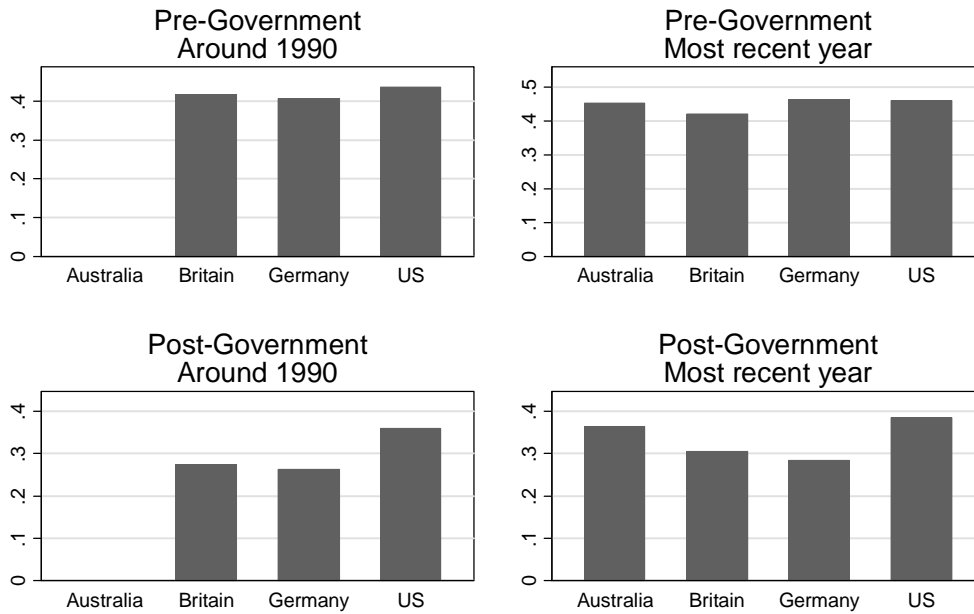
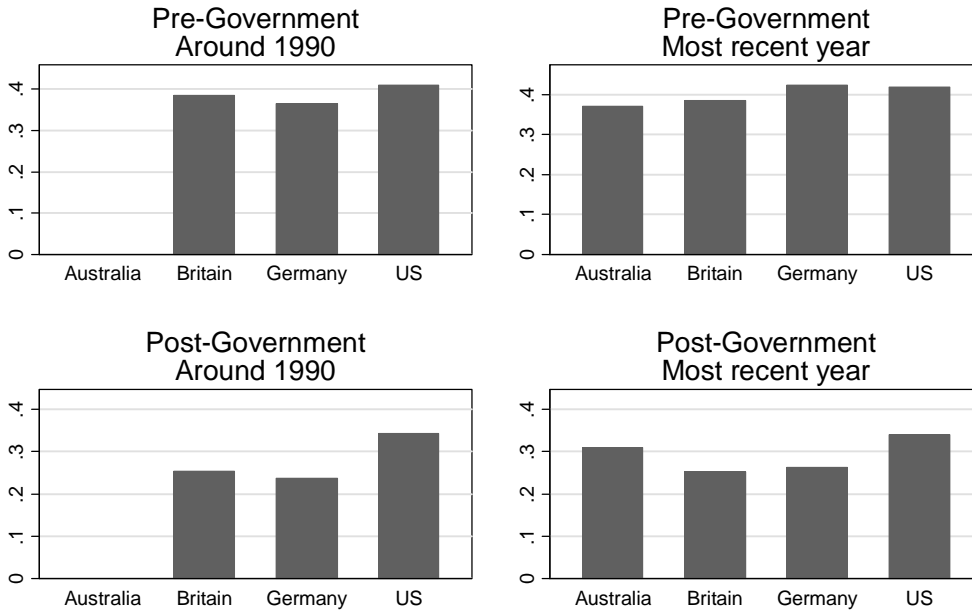


Figure 7 repeats this comparison for triennial inequality. Around 1990, the ordering is the same as for annual income inequality. In terms of pre-government or post-government income, the ordering from most to least equal was the US, Britain, Germany. In the most recent year, the ordering in terms of three-year market income was: Germany, the US, Britain, Australia. After taxes and transfers, the ordering was: the US, Australia, Germany, Britain.<sup>3</sup>

<sup>3</sup> Similarly, for five-year post-government income or ten-year post-government income, the ranking is US, Germany, Britain (results not shown).

Figure 7: Comparing Three-Year Inequality (Gini Coefficient)



Implicit in any comparison of annual income inequality and permanent income inequality is the degree of year-to-year income mobility. While some sense of the degree of income mobility in a country may be gleaned from a comparison of the difference between annual inequality and measures of inequality estimated over a longer timeframe, a more precise approach is to directly estimate mobility. For this purpose, a range of mobility indicators have been developed (see Jenkins 1991; Massoumi 1998; Benabou and Ok 2001; Fields 2002; Van Kerm 2004).

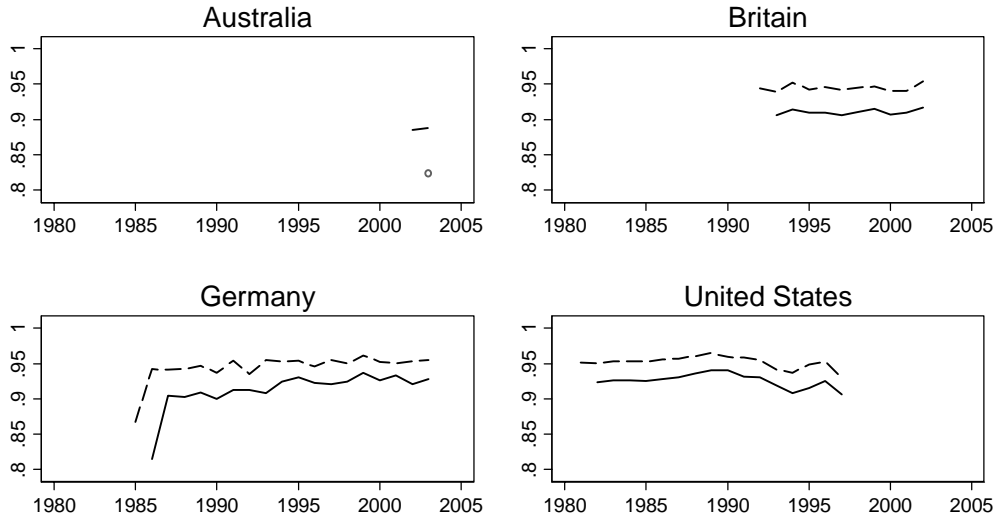
Here, I use the Shorrocks ratio (Shorrocks 1978), which is the ratio of average annual inequality over T years to permanent income inequality estimated from individual income summed over those T years. The Shorrocks ratio can vary between 1 (an immobile society, in which annual income inequality equals permanent income inequality) and epsilon (a perfectly mobile society, in which permanent income inequality approaches zero). Where  $m_t$  is the average population income in year t,  $M_{t+n}$  is the average population income over all years t to t+n,  $G_t$  is the gini coefficient in year t, and  $G_{t+n}$  is the gini coefficient based on each individual's permanent income over the years from t to t+n, the Shorrocks ratio for n-year incomes is defined by:

$$ShorrocksRatio_n = \frac{1}{nM_{t+n}} \frac{\sum_{i=t}^{t+n} G_i m_i}{G_{t+n}}$$

Note that since higher levels of the Shorrocks ratio denote less mobility, it is effectively an index of *immobility*. Figures 8 and 9 depict the Shorrocks ratio for the four countries. In terms of pre-government income, Britain is flat over this period, while Germany became somewhat less mobile in the late-1980s, and the United States became slightly mobile in the 1990s.

Figure 8: Two-Year and Three-Year Income Immobility  
(Shorrocks Ratio Based on Pre-Government Income)

Higher number denotes less mobility



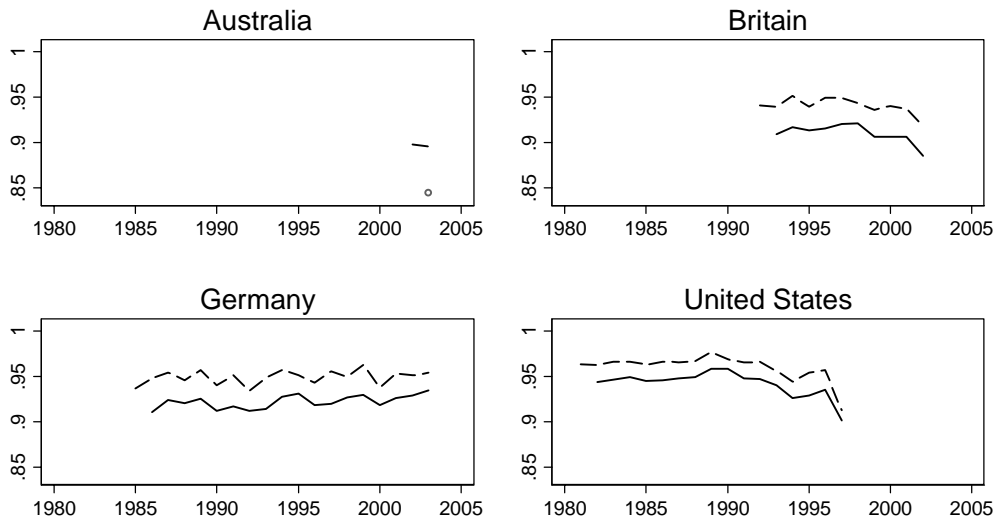
Dashed line denotes two-year mobility.  
Solid line (circle for Australia) denotes three-year mobility.

Figure 9 focuses on income immobility, based upon post-government income. For Germany, post-government income mobility is constant across the period in question, while for Britain and the US, income mobility increased somewhat. For Australia, the panel is too short to measure changes in mobility.



Figure 9: Two-Year and Three-Year Income Immobility  
(Shorrocks Ratio Based on Post-Government Income)

Higher number denotes less mobility

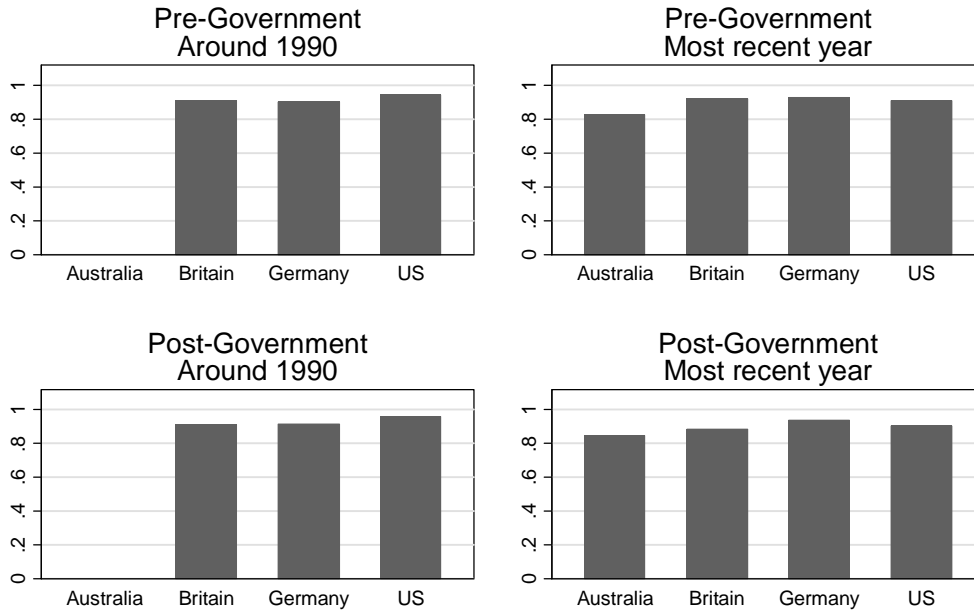


Dashed line denotes two-year mobility.  
Solid line (circle for Australia) denotes three-year mobility.

Lastly, Figure 10 compares mobility across the four countries. Around 1990, the US was more immobile than either Britain or Germany (this is consistent with Burkhauser and Poupore 1997 who find that over the period 1983-88, the US was less mobile than Germany, and is also broadly consistent with the Britain-Germany-US comparison in Jarvis and Jenkins 1998). During the 1990s, Germany became somewhat less mobile, and the US somewhat more mobile.

So far as I am aware, this is the first time that mobility rates in Australia have been compared with those in other countries. It appears that on either measure of income, Australia is significantly more mobile than Britain, Germany or the US. In terms of post-government income, the mobility ranking of the countries is (from least to most mobile): Germany, Britain, the US, Australia. The shift from one-year post-government income to three-year post-government income reduces the German gini coefficient by only 7 percent; by contrast, the Australian gini coefficient falls by 18 percent.

Figure 10: Comparing Three-Year Income Immobility Shorrocks Ratio (Higher number denotes less mobility)



## 5. Conclusion

This paper uses panel data from four developed nations to estimate permanent income inequality, measured by averaging equivalized household income across multiple years. In general, I find that permanent income inequality has followed similar trends to annual income inequality, rising particularly sharply in the United States over the 1980s and 1990s. Comparing levels of permanent income inequality across countries, the ranking of triennial pre-government inequality is Germany, the US, Britain, Australia. However, a more progressive systems of taxes and transfers in Britain and Germany changes these rankings substantially. In terms of triennial post-government inequality, the ranking is the US, Australia, Germany, Britain.

Additionally, I calculate mobility rates across countries, and find some evidence that mobility rates rose during the 1990s in both Britain and the US. Ranking the four countries in terms of mobility, and taking the effects of government policies into account,

I find that in the most recent year, the most mobile of the four countries is Australia, while the least mobile is Germany.

Contrary to popular belief, however, differences in mobility rates have little impact on countries' inequality rankings.<sup>4</sup> In terms of post-government income, the inequality ranking using annual inequality measures is the US, Australia, Britain, Germany. Using three-year average incomes, the ranking becomes the US, Australia, Germany, Britain. Those countries that are most unequal in terms of standard measures of inequality are also the most unequal in terms of permanent income inequality.

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<sup>4</sup> For example, *The Economist* in 2003 presented data showing that inequality in the US had risen, but then caveated this with the statement: "America is a remarkably mobile society".

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## Data Appendix

For the three countries in the CNEF (Britain, Germany and the US), variable names follow the same convention, with I11101YY denoting household pre-government income and I11102YY denoting household post-government income. In each case, YY represents the two-digit year. For example, I1110195 is household pre-government income in 1995.

For the US, the PSID stopped estimating household taxes in survey year 1992 (income year 1991) so the value of post-government income is set equal to missing for subsequent years. I therefore follow the advice of the CNEF manual, and use I11113YY in place of I11102YY for the US in all years.

In the CNEF files, the number of household members is given by the variable D11106YY. In all cases, incomes are equalized by dividing by the square root of the number of household members.

All figures are weighted using cross-sectional weights (W11101YY). Although the CNEF files also contain longitudinal weights (W11103YY), this variable is not used, since changing the weight affects comparisons between single-year inequality and multiple-year inequality.

### *Australia (HILDA)*

Since Australia is not yet part of the CNEF, I used the HILDA variable names that appeared to be most comparable with the CNEF. HILDA variable names commence with a letter to denote the year of the survey, with the prefixes a, b and c denoting 2001, 2002 and 2003 respectively. For example, atifprip is the variable for individual financial year private income (positive values) in 2001. In what appears below, this prefix letter is denoted by an underscore.

`_tifprip`=individual financial year private income, positive values  
`_tifprin`=individual financial year private income, negative values  
`_tifdip`=individual financial year disposable income, positive values  
`_tifdin`= individual financial year disposable income, negative values

**Pre-government income** = (`_tifprip`-`_tifprin`) summed within each household (`_hhrhid`), and divided by the square root of the number of household members (`_hhpers`).

**Post-government income** = (`_tifdip`-`_tifdin`) summed within each household (`_hhrhid`), and divided by the square root of the number of household members (`_hhpers`).

In all cases, I use cross-sectional weights (`_hhwte`) for the same reason as with the CNEF.

For consistency with the CNEF files, imputed values are recoded as missing.

### *Britain (BHPS)*

**Household pre-government income:** This variable represents the combined income before taxes and government transfers of the head, partner, and other family members. This variable is constructed by the BHPS staff. It sums labor and nonlabor incomes of all household members. Missing values are imputed. See the BHPS codebooks at [www.data-archive.ac.uk](http://www.data-archive.ac.uk) for further details. This variable is in current year British pounds.

**Household post-government income:** This variable represents the combined income after taxes and government transfers of the head, partner, and other family members. Household post-government income equals the sum of household pre-government income, household social security income, household annual public transfer income minus net household annual taxes. Household pre-government income consists of household annual gross labour income, household annual asset income, household private transfer income, household private retirement income. The above household income measures were constructed by Elena Bardasi, Stephen P. Jenkins, and John A. Rigg of the Institute for Social and Economic Research at the University of Essex. See Bardasi et al. (1999) in the DOC folder for details on the construction of this variable. This variable is in current year British pounds.

### *Germany (GSOEP)*

The codebook defines the two variables as follows.

**Household post-government income:** This variable represents the combined income before taxes and government transfers of all individuals in the household 16 years of age and older. This variable is the sum of total family income from labor earnings, asset flows, private retirement income and private transfers. Labor earnings include wages and salary from all employment including training, self-employment income, and bonuses, overtime, and profit-sharing. Asset flows include income from interest, dividends, and rent. Private transfers include payments from individuals outside of the household. Though not reported, this income most likely includes alimony and child support payments. This variable is in current year Euros.

**Household post-government income:** This variable represents the combined income after taxes and government transfers all individuals in the household 16 years of age and older. This variable is the sum of total family income from labor earnings, asset flows, private retirement income, private transfers, public transfers, and social security pensions minus total family taxes. Labor earnings include wages and salary from all employment including training, self-employment income, bonuses, overtime, and profit-sharing. Asset flows include income from interest, dividends, and rent. Private transfers include payments from individuals outside of the household. Though not reported, this income most likely includes alimony and child support payments. Public transfers include housing allowances, child benefits, subsistence assistance from the Social Welfare Authority, special circumstances benefits from the Social Welfare Authority, government student assistance, maternity benefits, unemployment benefits, unemployment assistance,



and unemployment subsistence allowance. Social security pensions include payments from old age, disability, and widowhood pension schemes. The tax burdens provided here are based upon updated and modified tax calculation routines developed by Schwarze. The tax burden includes income taxes and payroll taxes (health, unemployment, and retirement insurance taxes). These routines are described in Schwarze (1995). Household post-government income has no negative values. This variable is in current year Euros.

### *United States (PSID)*

**Household pre-government income:** This variable represents the combined income before taxes and government transfers of the head, partner, and other family members. This variable is the sum of total family income from labor earnings, asset flows, private transfers, and private pensions. Labor earnings include wages and salary from all employment including self-employment (farming, business, market gardening, and roomers and boarders), professional practice or trade, bonuses, overtime and commissions. Asset flows include income from interest, dividends, and rent. Private transfers include child support, alimony, and income from non-household members. Private pensions include retirement income from private pension plans, Veterans Administration pensions, and annuities. Household pre-government income can have negative values. This variable is in current year dollars.

**Household post-government income:** This variable represents the combined income after taxes (TAXSIM) and government transfers of the head, partner, and other family members. This variable is the sum of total family income from labor earnings, asset flows, the imputed rental value of owner occupied housing, private transfers, public transfers, and social security pensions minus total household taxes. Except for the household tax component, this variable is identical to I11102YY. Federal and state income taxes are estimated using the National Bureau of Economic Research (NBER) TAXSIM Model with currently available PSID variables. Taxes are estimated for each tax unit within the household and then summed over all tax units within the household to arrive at a total household tax burden. Payroll taxes of the head and partner are added together with the federal and state income taxes to arrive at a total household burden. Payroll taxes are calculated by bracketing labor income and applying the average payroll tax rate for that bracket as reported by the Social Security Bulletin, Annual Statistical Supplement, 1998, p. 37. The method for estimating PSID tax burdens is described in Butrica and Burkhauser (1997). The NBER TAXSIM Model is described in Feenberg and Coutts (1995). No algorithms are provided for the tax estimates. Household post-government income can have negative values. This variable is in current year dollars.