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Title:

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Date:

2018-06-01

Citation:

Burkhauser, R. V., Hahn, M. H. & Wilkins, R. (2018). Transitioning from an Historical to a Contemporary Use of Tax Record Data for Measuring Top Incomes in Australia. *Economic Papers*, 37 (2), pp.113-145. <https://doi.org/10.1111/1759-3441.12209>.

Persistent Link:

<https://hdl.handle.net/11343/283799>

**Transitioning from an Historical to a Contemporary Use of Tax Record Data for
Measuring Top Incomes in Australia**

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21 September 2017

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This is the author manuscript accepted for publication and has undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the [Version of Record](#). Please cite this article as [doi: 10.1111/1759-3441.12209](https://doi.org/10.1111/1759-3441.12209)

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Article type : Manuscript

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Abstract

A major literature using tax data measures the share of income captured by the top of the income distribution. We correct existing Australian estimates by removing employers' social contributions from the denominator and explain the limitations of using public-record tax tables to capture the numerator. We show that ATO unit record sample data is only able to accurately measure incomes of top income groups below the top 1 percent. We conclude that greater access to the entire unit tax record population will be necessary to bring Australian research in this area up to that in the US and UK.

Keywords: inequality, top incomes, tax records data

JEL Classifications: D31, C81

I. Introduction

A major literature using personal income tax data now measures the share of gross taxable income captured by the top part of the income distribution. Atkinson, Piketty and Saez (2011) survey the methodology, main findings, and perspectives emerging from the collective country-based research projects at its core.¹

This literature diverges from traditional household survey-based studies of the income distribution, by examining the distribution of gross taxable income across tax units and by focusing on the top of the distribution. In contrast, in conventional survey-based analyses of the income distribution, the household is almost always the income-sharing unit, the income definition is disposable (post-tax post-transfer) income (adjusted for differences in household size and composition using an equivalence scale), the unit of analysis is the individual, and indices based on the entire income distribution (e.g. the Gini coefficient) are typically the measures of inequality.

These differences reflect both the strengths and limitations of tax data. Perhaps the most important of the limitations is that the incomes of non-tax filers are, by definition, not available in tax data. Non-filers generally have low incomes, which is a key reason why researchers using tax data typically calculate top income shares rather than measures that characterise the entire income distribution. While Leigh (2007) suggests that top income shares are reasonably good proxy measures of overall inequality, the correlation is far from perfect. Consequently, tax data provide only a partial picture of inequality levels and trends.

That said, tax data have two features that make them especially valuable to researchers: in many countries, including Australia, the data extend back to the early 20th century, far longer than even the longest survey data series; and they are better able than household surveys to capture the incomes of the very rich.

In most countries, for most years, historical top incomes series were derived from

¹ Atkinson, Piketty and Saez (2011) use the term ‘gross taxable income’ as the concept that each country study is trying to identify in their tax record based data. Operationally, what income sources are actually measured in these tax records will vary by country as will the terms their tax office uses to describe them in their tax data. When we use the generic term, ‘gross taxable income’ here we are doing so in the spirit of Atkinson, Piketty and Saez (2011). When we are talking about the specific Australian Tax Office (ATO) tax records that researchers have used to capture ‘gross taxable income’ we will use ATO terms for what is contained in their tax tables. See Tables 1 and 2 for a description of these terms as used in the Australian tax record based top income literature.

administrative tax tables provided by the country's tax office. But more recently, in some countries (e.g., the United States and the United Kingdom), researchers have gained access to unit record tax data based on the entire population of tax filers. This has greatly improved their ability to systematically measure levels and trends in income distributions. This is the case because unit tax record data allow researchers the flexibility to more precisely identify the sources of income in the tax record data that they desire to include in their gross taxable income measure, consistently use this income concept in the numerator of their top income share measure, and better match it to the income measure they use in the denominator ('income control total').

More importantly, these unit record tax data also allow researchers to move beyond examination of a gross taxable income measure of income by adding non-taxable income from survey data to these tax records as well as use tax simulation models to obtain top income shares based on after-tax income. Finally, these unit record tax data allow researchers interested in correcting for under-coverage of the top part of the income distribution in survey data to add tax record data to their survey data sets, as recent US and UK studies demonstrate.

Combining US tax, survey and national accounts data, Piketty, Saez and Zucman (forthcoming) create long-run series of income shares that capture the entire income distribution, allowing them to track levels and trends not just for the top but also for the middle and bottom parts of the distribution. More flexible than tax data alone, their combined data enables them to some degree to examine additional income definitions other than taxable income. In another US study, Larrimore et al. (2016) assemble an even more flexible data set by combining more complete tax record data and merging survey data onto it. Exploiting their data's improved ability to capture top incomes and additional income sources, they show that top 1% income shares were lower and grew more slowly when using broader their definitions measures of income rather than the narrower market income or taxable income that is common in the top incomes literature.

Burkhauser et al. (forthcoming, a) document that the methods used to capture the top part of the income distribution in the Households Below Average Income (HBAI) Survey, the first UK survey to link tax record data to survey data in order to more fully capture the top part of the income distribution, does not fully capture the top 1 percent of tax filers.

Burkhauser et al. (forthcoming, b) using the same underlying unit tax record data with the HBAI survey data more fully captures the top 1 percent of tax filers within the HBAI survey data. With this more complete data they then show how top income shares change when

moving from a narrow to a broader income base and how this allows them to produce more like-on-like cross national comparisons of top incomes in the UK and USA. They then turn to the traditional survey based literature and use their improved HBAI survey data to show that inequality (using Gini coefficients and other standard measures of inequality in this literature) of gross household income among all persons between the mid-1990s and late 2000s increased more than shown by the official HBAI series, especially between 2004/05 and 2007/08. (See Corlett, 2017 for an example of the use of these two methodological papers to propose reforms in the measurement of household income statistics in the UK.

Access to unit record tax data is more limited in Australia. Using publicly available Australian Taxation Office (ATO) tax tables, Atkinson and Leigh (2007) and Burkhauser, Hahn and Wilkins (2015) provide estimates of levels and trends in the share of gross taxable income held by Australian top income groups starting well before researchers had access to ATO unit record data.

Here, we first review these past estimates based on ATO published tax tables and correct their denominator. Because employers' social contributions are not taxed, they are not included in ATO published tax tables and are, therefore, not included in our gross taxable income numerator.² Hence, rather than use the National Accounts denominator in Atkinson and Leigh (2007) and Burkhauser, Hahn and Wilkins (2015), we subtract employers' social contributions from the denominator beginning in 1983, when they became a separate item in the National Accounts.

We then systematically explain the limitations of using ATO public record tax tables to capture our numerator and show the potential, for more contemporary times, of using either tax tables especially customised for this purpose based on the entire population of tax filers or the public-use ATO samples of this population. We do so by first comparing our public tax-table-based results to those we produce from customised tax tables that the ATO provided us from the entire population of tax filers beginning in 2000.³ We then compare these results

² The term 'employers' social contributions' can mean different things in different countries. In the Australian National Accounts, it includes contributions to superannuation made by employers and payments of workers' compensation premiums. It excludes severance, termination and redundancy payments, and payments for temporary leave other than annual leave and long service leave, even though these payments may fall under employers' social contributions in other countries. See ABS (2016a) for more information.

³ In Australian tax data, years do not refer to calendar years but to financial (or tax) years, which begin on 1 July and end on 30 June of the following calendar year. When we refer to 2000, as we do here, we mean the financial

with those we find using data from the public-use samples (1% and 2%) of tax filers the ATO has made available to researchers since 2003.

Our customised tables differ from the published tax tables in two key ways. First, our measure of gross taxable income that forms the numerator in our calculation of top income shares is precisely identified. As a consequence, we do not need to employ the interpolation methods that are required when using published tax tables that show the number of tax filers and the sum of their income sources in each income range. Second, the customised tables better adhere to a gross taxable income concept that is consistent with both household survey income concepts and the definition of income employed in the National Accounts, from which the denominator (household income of all persons minus employers' social contribution) is derived. Nonetheless, when we compare results for gross taxable income using our customised ATO tax tables with those from the published tax tables used by Burkhauser, Hahn and Wilkins (2015), we find their measures of gross taxable income come reasonably close to our customised ATO tables based on the entire population.

When we make the same comparisons using the same methods to estimate top income shares using the ATO 1% unit record sample, we are able to replicate our findings from our customised ATO tables for top income groups below the top 1 percent. But we are not able to do so for the top 1 percent. Accuracy is substantially improved using the ATO 2% sample, which was introduced in 2011, although our analysis indicates that its improved accuracy is a result of reduced censoring of income values rather than from increased sample size.

Empirical researchers are ultimately limited by available data in their ability to provide answers to policy questions. Our findings show the great potential value of providing access to unit record tax data to researchers interested in capturing the share of income held by Australian top income groups. But we conclude that greater access to the entire unit tax record population (with necessary safeguards for confidentiality that do not affect the ordering of that population by income overall) will be necessary to bring Australian research in this area up to that in the United States and the United Kingdom.

II. Levels and Trends in top income shares: 1921 to 2012

In their seminal work on top income shares in Australia, Atkinson and Leigh (2007) use published ATO tax tables in conjunction with National Accounts data to examine the

year 2000–01. We follow this convention throughout the paper.

period from 1921 to 2003. Leigh subsequently updated those values each year until 2010. In Burkhauser, Hahn and Wilkins (2015), we provide an alternative series of top income values, also using published ATO tax tables in conjunction with National Accounts data, for the period from 1970 to 2011. In that paper, we create a series of top income shares (excluding capital gains) that is consistent with the Atkinson and Leigh series prior to 1970 when few capital gains were taxed. However, our series begins to diverge from their series in the mid-1980s when the share of capital gains taxed began to increase due to major tax reforms. As we will discuss in detail below, after correcting the denominator to account for the fact that employers' social contributions are not taxed and hence are not in the numerator, we are able to produce two alternatives to our series for more contemporary years that are not dependent on the published tax record tables. Our first contemporary top 1 percent series, beginning in 2000, uses customised ATO tables based on the entire ATO tax filer population. The second, beginning in 2003, is based on the public-use ATO unit-record samples.

Figure 1 reports the share of gross taxable income going to the top 1 percent of individuals from 1921 to 2012. We divide these years into four sections: 1921 to 1968, when only the Atkinson and Leigh (AL) series is available; 1969 to 1982, when the AL series and the Burkhauser, Hahn and Wilkins (BHW1) series are both available⁴; 1983 to 1999, when we are able to subtract employer social contributions from the National Accounts denominator (to produce a series we label BHW1*); and 2000 to 2012, when are able to use our customised ATO table values (to produce a series we label BHW2). Figure 2 focuses on these same series but, to control for differences in levels, indexes the series to 100 in each of three base years—1969, 1983 and 2000—to allow us to compare trends across series during the intervening time periods through to 2012.

Our discussion related to these figures will show that, while our corrections to the denominator from 1983 modestly increase top 1 percent income shares, this change has almost no impact on trends. More importantly, we will show that, since 2000, when we are able to compare results using our customised ATO tax tables with published tax tables, while there is also a modest increase in top 1 percent levels, it also does not substantially impact trends.

⁴ BHW1 is available from 1969 onwards, but in Burkhauser, Hahn and Wilkins (2015) we present it only from 1970.

Atkinson and Leigh methods: AL

Following approaches adopted by other country studies that use tax record data to capture the share of gross taxable income going to top income groups, Atkinson and Leigh (2007) produced estimates of Australian top income shares over the period 1921 to 2003. Their study, and subsequent updates, formed the Australian contribution to the World Top Incomes Database up to 2010.⁵ The nature of the data they use varies somewhat over the period examined, but from 1959 onward it is relatively consistent. For this period, Atkinson and Leigh use tax tables published by the ATO in conjunction with population data to ascertain the gross taxable income of top income groups (the numerator), and National Accounts data to ascertain the income of all individuals (the denominator, referred to as the income control total). See Table 1 for the components of income included in the Atkinson and Leigh numerator and denominator and how they differ from the numerators and denominators in the other series.⁶

Atkinson and Leigh use ABS population data to identify the number of individuals or 'tax units' in the top income groups for the numerator. Australia has always had individual (as opposed to family) taxation, so the total number of tax units in the population is assumed by Atkinson and Leigh to equal the number of individuals in the population aged 15 or over. Thus, the number of tax units in the top x percent is simply x percent of the population aged 15 and over. For example, in 1969, there were 8.74 million Australian residents aged 15 and over, implying there were 87,000 individuals in the top 1 percent, 870,000 people in the top 10 percent, and so on.⁷

Atkinson and Leigh used the original ATO published tax tables to ascertain the income of the highest-income individuals. For example, in 1969, the income of the top 1 percent income group was the income of the 87,000 highest-income individuals in the tax data. As Atkinson and Leigh acknowledge, these tax tables have several important limitations.

⁵ In 2015, the World Top Incomes Database became the World Wealth and Income Database (WID), containing estimates of both top income shares and top wealth shares. (See: Alvaredo et al., 2015.)

⁶ See Tables 2 and 3 for a detailed description for each of these components of income.

⁷ In principle, all persons with taxable income in excess of a minimum threshold must file a tax return, including children of any age. Thus, strictly speaking, an analysis of the distribution of tax unit income across tax units is simply an analysis of the distribution of personal (tax) income across the entire population, inclusive of children. In practice, very few individuals under 15 years of age lodge tax returns. Atkinson and Leigh (2007) therefore define the population of tax units to be all individuals aged 15 and over, an approach that we also adopt.

First, they only include taxable income—taxable market income and taxable government cash transfers. They miss non-taxable income such as disability benefits and employers' social contribution that the National Accounts include.

Second, some people receiving income do not lodge a tax return, even if that income is taxable. As a result, the sum of the taxable income the numerator captures will not only be smaller than the sum of all the income Australian residents receive but will be smaller than all the taxable income they receive. This is the reason why Atkinson and Leigh use the National Accounts as their data source when they construct their denominator.

Third, regardless of what concept of income the ATO tax tables contains, its reported by income range—that is, unlike unit record tax data which identifies income at the individual level, the tax tables only report the number of individuals and the sum of their income for each income range. Consequently, researchers must make an assumption about the distribution of income within the income bin (range) containing the bottom value of the top income group. That is, for the income bin that contains both members of the top income group and individuals just below the top income group, Atkinson and Leigh must estimate how much of the income in that bin goes to members of the top income group. To do so, they adopt the 'mean split histogram' method (Atkinson, 2005), which assumes a non-decreasing density within the income bin within which the bottom of the relevant top income groups falls.

Importantly, the income ranges of the bins within which the bottom of top income groups fall are frequently quite large, so that there is considerable scope for error in estimation of the income shares of top income groups. For example, as shown in Appendix Table A1, the income range of the bin in which the 99th percentile falls is often over 50% of the estimated level of the income of the 99th percentile, and the number of individuals in the bin often exceeds the total number of people in the top 1 percent.

Fourth, the ATO defines all the income that is captured in the tax records as 'Total Income'. It is this measure of income which comes closest to the gross taxable income concept Atkinson, Piketty and Saez (2011) use in their generic discussion of tax-based income. (See Footnote 1.) The ATO defines 'Net Income' as Total Income minus deductions for expenses incurred in gaining the income, and 'Taxable Income' as Net Income minus a limited number of allowed deductions that do not relate to expenses incurred in gaining the income. The tax tables used by Atkinson and Leigh are sorted by Net Income before 1978 and by Taxable Income from 1978 to 1991. Both Net Income and Taxable Income are somewhat

lower than Total Income (sum of all taxable income sources before deductions) for most individuals. Using these tax tables will not result in the same top income shares as those using Total Income.⁸

Atkinson and Leigh recognise this and in their paper use the ATO Total Income tax tables beginning in 1992. But as we show in Table 1, this results in a structural break in their top income series in 1992.⁹

To estimate the sum of gross taxable incomes of all Australian residents (the income control total), Atkinson and Leigh do not rely on the tax tables. Recognising that the tax data do not capture all income individuals receive, they instead use the household income account of the National Accounts. To be consistent with the gross taxable income measure used in the numerator, the income control total that forms the denominator should only include that portion of household income from the National Accounts that is in the tax data. Atkinson and Leigh attempt to match the National Accounts income measure to the tax data measure by including only certain components of the household income account (see Table 1). However, inconsistencies remain. First, their income control total includes all cash income received by persons living in Australia, but some of this income, such as disability benefits and employers' social payments remain in their control total even though this income is not taxed. Hence unless all of these income sources go to those below the top income group, their presence will bias downward top income shares. Second (as explained further below), the National Accounts exclude some components of gross taxable income, including realised taxable capital gains and dividend imputation credits, that are included in Atkinson and Leigh's income numerator.

In Figure 1, the series labelled AL presents updated estimates of top 1 percent income shares for the period 1921 to 2012 using the Atkinson and Leigh (AL) method. This updated

⁸ The sorting of income by Net Income or Taxable Income acts to reduce top income share estimates. This is because individuals with high Total Income but high deductions will be allocated to relatively low Net Income or Taxable Income ranges. There will therefore be individuals with Total Incomes that should place them in the top x percent, but who do not get included in that top income group in the calculation of the group's income share. The result is that the income of a lower-income individual is instead included in the top income group, which leads to underestimation of top income shares.

⁹ Before 1969, Atkinson and Leigh rely on tax tables that were subject to frequent changes in the underlying income definition. We therefore limit our descriptions of Atkinson and Leigh's tax tables to the period since 1969 and refer the reader to Atkinson and Leigh (2007) for more information about their tax tables before 1969.

series, while using the same method as Atkinson and Leigh, differs from their original series because of the way National Accounts are updated and revised. The National Accounts data are preliminary when first released and subsequent releases contain revisions to estimates for earlier quarters or years as new and improved information becomes available to the ABS. Furthermore, National Accounts data are subject to periodic revisions of concepts, definitions, and methods. Such revisions, when they occur, are typically applied retrospectively, so that using the most recent release for all previous years produces a more consistent income control total.¹⁰

Atkinson and Leigh use the latest release of the National Accounts available at the time of their analysis to produce the income control total for the period to 2003. This release incorporated all revisions to earlier years (prior to 2003). Consequently, taking the same approach as Atkinson and Leigh involves using the latest National Accounts Release. For this paper, this is the 2015–16 release published in ABS (2016b), which incorporates further revisions to the National Accounts for the period up to 2003 that have occurred since the National Accounts release used by Atkinson and Leigh.

In addition, we use tax tables that are somewhat different from theirs. Our tax tables are more detailed in that they show more income sources. With these more detailed tables we often produce the same results as we would if we used Atkinson and Leigh's tax tables. As we showed in Burkhauser et al. (2015), the differences caused by our use of these detailed tables are minor in terms of levels and trends compared to the effects of the other changes in methods discussed below.

Burkhauser et al. (2015) methods: BHW1

Burkhauser et al. (2015) address several of the limitations of the Atkinson and Leigh approach to estimating top income shares, two of which are particularly important. Major tax reforms in Australia in the mid-1980s included two changes that substantially impacted the personal income tax base. From 1 July 1987, a system of dividend imputation was introduced, allowing dividend recipients to claim tax credits for the imputed company tax paid on those dividends. These credits entered the personal income tax base, resulting in a substantial increase in measured incomes in the tax tables from the 1987 tax year, which disproportionately went to top income groups. However, while these credits are included in

¹⁰ National accounts data (that are comparable) are only available back to 1958; hence, only estimates from 1958 onwards have been updated. Appendix Table A2 contains all the estimates used to produce Figure 1.

the tax tables, they should in principle not be part of a gross taxable income concept, which is concerned with before-tax income. That is, before-tax income is income both before deducting income taxes and before addition of tax credits, implying imputation credits should be excluded from this definition of income.¹¹

The second major change, of more serious consequence for ascertaining trends in top income shares, is that most realised capital gains (other than on the family home) only became taxable from 1 July 1986, and even then it was only on assets acquired after 19 September 1985. This resulted in a steady rise in the share of realised capital gains entering the tax base from 1986, leading to spurious measured increases in top income shares to at least the mid-2000s. Not controlling for this expansion of the tax base would confuse the increase in top income shares resulting from this change in the tax base with actual changes in the share of resources going to top income groups.

In addition to these issues, as noted in the preceding section, realised capital gains and dividend imputation credits do not enter the National Accounts data that is used in Atkinson and Leigh's income control total, so their inclusion would also overestimate top income shares unless they were also included in the denominator. Consequently, to capture a more consistent measure of gross taxable income, it is important to exclude both realised taxable capital gains and dividend imputation credits from the definition of gross taxable income.¹²

In Burkhauser et al. (2015), we address these problems by producing top income share estimates for the period 1970 to 2010 excluding dividend imputation credits and taxable realised capital gains. Our estimates also address a problem that arose with annual updates that were produced by Leigh in each year between 2003 and 2010, whereby changes to income concepts and definitions in the National Accounts, as well as revisions to estimates subsequent to first release, led to spurious measured changes in Leigh's top income shares series from year to year. By doing so, we produce a top incomes series (which we here label

¹¹ Of course, one may be interested in income before deduction of income taxes but after addition of tax credits. However, this would then require addition of tax credits other than dividend imputation credits.

¹² In the WID series, most countries do not tax capital gains and hence this source of income is not included in their gross taxable income series. In the few countries that do tax realised capital gains, researchers produce both a series with and a series without taxable realised capital gains, both to allow for better cross-national comparisons with other countries and because the use of taxable realised capital gains is inconsistent with Haig-Simon principles. See Armour et al. (2013) for a discussion of this issue.

BHW1) that is not only a more consistent measure to use along with the AL series prior to 1986, but is also more internally consistent (given that realised capital gains and dividend imputation credits do not enter the income control total).¹³ Due to these improvements, BHW1 has been the Australian contribution to the income component of WID since 2014.

Figure 1 presents these BHW1 estimates of the top 1 percent income share beginning in 1969. As with the AL series, BHW1 has been updated by extending it to 2012 and using the 2015–16 release of the National Accounts for the denominator in all years. Over the period between 1969 and 1985, the AL and BHW1 series are almost identical, since there was little in the way of taxable realised capital gains in the AL series and the tax reforms had not yet taken place. But between then and 1988 they diverge considerably, initially because of the change in the tax treatment of dividends and thereafter because of the increase in taxable capital gains. Figure 2, which examines trends over time from three base years (1969, 1983 and 2000) by indexing each series to 100 in the base year, shows a similar pattern for differences in trends.¹⁴

Using customised ATO tables based on the entire tax filer population: BHW2

As mentioned above, neither AL nor BHW1 include non-taxable income such as disability benefits and employers' social contributions that are included in their National Accounts denominator. This will have no impact on top income shares if it is the case that these sources of income go only to those not in the top income group being examined. It is plausible to assume that this is the case for disability benefits, but less so with respect to employers' social contributions.

It is possible to exclude employers' social contributions from the National Accounts beginning in 1983, when they were first made a separate item in the quarterly National

¹³ In their user guide for the Survey of Income and Housing, the Australian Bureau of Statistics, which is responsible for producing the Australian National Accounts, writes 'The ASNA [Australian System of National Accounts] estimates of dividends are based on data provided by the ATO. These differ from the SIH [Survey of Income and Housing] estimates as they do not include franking [i.e. imputation] credits' (ABS, 2015). In other words, imputation credits are not included in the National Accounts. They, therefore, do not enter the income control total.

¹⁴ Appendix Tables B1 to B5 precisely identify the separate contributions of dividend imputation credits and capital gains to the differences in top income share estimates obtained by AL and BHW1. The tables show that the effects of excluding capital gains rose over time up to 2006, whereas the effects of excluding dividend imputation credits have been fairly stable over time.

Accounts.¹⁵ We do this and hence change the denominator for years beginning in 1983. The effect of this change is shown in Figures 1 and 2 by the series labelled BHW1*, which differs from BHW1 only in its denominator. As can be seen in Figure 1, this slightly shifts up the series from the unadjusted BHW1 series, but Figure 2 shows that it has virtually no effect on trends.

While the BHW1 series addresses inconsistencies in the Atkinson and Leigh series, and the BHW1* series further addresses the problem of not subtracting employers' social contributions from the denominator, both series still suffer from limitations of publicly available tax-table-based data with respect to the numerator. Specifically, while conceptually it is important to subtract taxable realised capital gains and imputation credits from gross taxable income, operationally there is a problem with the way this is implemented for BHW1 (and BHW1*) because of the limits of the publicly available tax tables. These tax tables consist of a number of income ranges or bins, with the number of individuals in them based on an income concept of gross taxable income that includes taxable capital gains and imputation credits. To create our series without capital gains and imputation credits, we created 'synthetic' tax tables that, for each income bin, subtracts total capital gains and imputation credits for that bin from the income of tax filers in the bin. We then calculate top income shares using these synthetic tax tables as per Atkinson and Leigh's (2007) method.

This method for removing capital gains and imputation credits implicitly assumes that capital gains and imputation credits within an income bin are the same proportion of income for all individuals within the bin. That is, we assume no re-ranking of individuals after the removal of capital gains and imputation credits.

In 2015, we requested and received customised tables from the ATO based on the entire population of tax records. These tables provide ATO 'Total Incomes' of various top income groups excluding imputation credits and realised capital gains.¹⁶ The ATO was,

¹⁵ We use the September 2016 quarter release of the National Accounts (ABS 2016c) to obtain values for employers' social contributions since 1983. We chose this particular release because the values it contains are most comparable to those of the 2015–16 financial-year release (ABS 2016b), which we use to construct our National Accounts denominator, but which only shows employers' social contributions as a separate item since 1989. We continue to use the yearly release, rather than the quarterly release, because our top income share series correspond to a whole (financial) year, and we want to avoid summing over quarterly data (e.g. because of rounding errors) as much as possible.

¹⁶ The top income groups are the top 0.1%, 0.5%, 1%, 5%, 10%, 20%, 30%, 40%, 50% and 60%. Some

however, only able to produce these data back to 2000. With these tables we are able to produce more precise estimates of gross taxable incomes for the period 2000 to 2012. The new series addresses all limitations of the published tax tables for producing a gross taxable income top income series that excludes capital gains and imputation credits: 1) the classification of gross taxable income excluding capital gains and imputation credits by consistent income ranges; 2) the need for distributional assumptions within income bins; and 3) the inability to accurately remove capital gains and imputation credits.

In Figure 1, we add this series, which we label BHW2, for the years beginning in 2000. The BHW2 series based on our customised tax tables from the entire tax filer population offers a more consistent set of numerator income sources for the years since 2000 than do BHW1 or BHW1*, whose numerators are based solely on publicly available tax tables. We see that there is a jump up in the top 1 percent income share in 2000 when we are better able to measure gross taxable income. That said, as can be seen in Figure 2, trends in BHW1* and BHW2 are quite similar across most years since 2000.

Figure 3 focuses solely on the years since 2000 to better see what is driving changes in our numerator that are responsible for the differences we find between BHW1* and BHW2 in Figure 1. The potential sources of differences comprise:

- (1) the 're-ordering' of individuals in tax tables, due to the exclusion of dividend imputation credits and capital gains, that is not taken into account by BHW1*;
- (2) the sorting of individuals in BHW1* by ATO Taxable Income ranges rather than Total Income ranges;
- (3) the errors in BHW1* in the imputation of income of individuals within the income range in which the bottom of the top income group falls;
- (4) the BHW2 minor adjustments to the gross taxable income measure (described in Table 1); and
- (5) revisions (additions) to the tax data subsequent to publication of the earlier tax tables (primarily driven by late filers).

We are able to separate out the difference between lack of re-ordering [BHW1 (no re-ordering problem)] and other possible causes, but doing so explains only a small component

additional minor adjustments were made to better match the income variable to actual income received by individuals. As shown in Table 1, the changes were to add 'exempt foreign employment income' and correct for income deferrals (from earlier years and to later years).

of the difference we report in Figure 3.¹⁷ It is not possible to identify the separate roles of the other causes, but recall that revisions to National Accounts explained part of the difference between the original National Accounts values used by Atkinson and Leigh and the revised version of National Accounts we use in our work. This same sort of revision by the ATO in preparing our customised tables is likely to explain the decline in the difference between BHW1* and BHW2 in 2011 and 2012. That is, in these recent years the usual changes in the tax record data subsequent to release of the published tables may not yet have been completely done by the time of production of our customised tax tables. If so, this suggests such revisions may be a large component of the difference we see in these levels and those from previous years.

Figure 4, like Figure 3, focuses solely on the years since 2000, but examines differences in BHW1* and BHW2 trends indexed to 100 in 2000. The differences in trends are modest in most years. In Appendix Figure A1, BHW1* and BHW2 levels from 2000 are reported for alternative top income groups. In all cases, BHW2 levels are consistently above BHW1* levels, but there are only modest differences in trends.

Using the public use ATO 1% and 2% samples of tax filers

The customised ATO tables we use to create BHW2 have the great advantage of being based on the entire population of tax filers in Australia. But this rather inflexible way of providing information on top income tax filers has the disadvantage that it does not permit a researcher to test the sensitivity of using alternative income sources in the numerator, since doing so with these data results in the same issues discussed with respect to BHW1. This would not be an issue if the ATO provided its unperturbed unit tax record data for its entire population of tax filers to researchers. But the ATO has not done this. Instead, beginning with 2003, the ATO provides a unit-record sample file of tax filers each tax year. We call it the AUTAX file. This was a 1% sample of all tax filers through to 2010 and a 2% sample since 2011. However, in all tax years, these samples are subject to top-coding and bottom-coding, as well as perturbations, to protect the confidentiality of tax filers. Hence it is not certain that the AUTAX files can accurately replicate our BHW2 top income shares series, which is derived from the unaltered income data of the full population of tax filers.

¹⁷ Appendix Tables B6 to B10 precisely identify the separate contributions of (1) changes to the control total; (2) 're-ordering' of individuals; and (3) all other factors combined (sources (2) to (5) above) to the differences in top income share estimates obtained by BHW1 and BHW2.

Figure 5 shows that, in most years, the AUTAX files provide a poor measure of the income share of the top 1 percent. The exception is 2011 and 2012, when the 2% sample is used. Importantly, in Figure 6, we see that, for the top 10–5 percent, 5–1 percent and 1–0.5 percent of tax filers, both the 1% and 2% AUTAX samples come close to replicating the BHW2 values. It is only within the top 0.5 percent and higher income groups that the 1%-sample AUTAX fails to do so. Hence, it is the inclusion of the top 0.5 percent within the top 1 percent bin that is driving the inaccuracy of 1%-sample AUTAX top 1 percent values.

We investigated whether the improved performance of the 2% sample data could be attributed to the larger sample size. But this was not the case. When we randomly split our 2% sample into two 1% samples there was no appreciable decline in their accuracy. Instead, we find that top-coding is substantially less prevalent in the 2% sample.

The unit-record samples do not directly provide information on who is top-coded, but it is possible to infer the proportion of each top income group that has at least one income component top-coded by observing multiple observations with the same value at the top extreme of the distribution of the income component. Our analysis of this ‘heaping’, which we present in Figure 7, indicates that it is among tax units in the top 0.5 percent income group that we find a high proportion (between 20 and 30 percent in the 1% sample file) is top-coded. Top-coding in the 2 to 10 percent top income groups, by contrast, appears to be very low.

Based on this evidence, we conclude that the AUTAX 1% sample file is not fit for examining top 1 percent income shares, but can be used to examine income shares of lower top income groups. In contrast, at least for the two years of data available to us, the AUTAX 2% sample file comes closer to replicating the BHW2 series values.

III. Summary and Conclusion

A major new literature using personal income tax data now measures the share of gross taxable income going to the top part of the income distribution. But in Australia, the two papers that estimate top income shares do so with standard ATO public use tax tables alone. Here we first review the methods used in Atkinson and Leigh (2007) and Burkhauser, Hahn and Wilkins (2015) to estimate top income share based on a consistent definition of gross taxable income minus imputation credits and capital gains.

Figure 8 reports what we consider to be the most consistent measure of this concept with respect to its numerator and denominator from 1921 to 2012. From 1921 to 1968 it is based on AL estimates that do not contain capital gains. From 1969 to 1982 it is based on BHW1 estimates. From 1983 to 1999 it is based on BHW1* estimates using a denominator

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that excludes employers' social contributions. From 2000 onwards, it is based on BHW2 estimates that for the first time use customised ATO tax tables that are based on the entire tax filer population and which free us from the standard problems previous researchers faced when using tax tables.

We find that our BHW2 top income shares increase modestly in level and have slightly different trends over the 2000s than our BHW1* series based on publicly available tax tables. However, we conclude that our new BHW2-based series shown in Figure 8 for this time period is reasonably consistent with the uncorrected series and with previous years in the entire series.

More generally, we conclude that, while the new series we report in Figure 8 is more consistent across time periods than the series reported in Atkinson and Leigh (2007) and Burkhauser, Hahn and Wilkins (2015), the major long-term takeaway over the period from 1921 to 2012 remains approximately the same. Top income shares excluding capital gains fell substantially from 1921 through the early-1980s. They spiked around the period of major tax reforms (1986-1989), rose substantially over the 1990s and then rose more modestly after 2000.

The customised tax tables the ATO provided us greatly improved our confidence in our findings for the 2000s and more generally for the findings from tax tables for earlier years. However, they are still limited by the inflexible parameters of tax tables relative to unit record tax data.

Access to contemporary unit record tax data from the entire population of tax filers in the United States and in the United Kingdom has improved the ability of researchers to capture the share of income held by top income groups. In Australia we find that this added value from tax records data is limited by our inability to capture the top 1 percent of the income distribution in the 1% unit record tax samples the ATO has provided researchers for 2003 through to 2010. Although we find that the 2% tax samples made available since then provide more accurate estimates of gross taxable income held by top income groups, they still contain censored and perturbed income variables that affect their ability to provide a complete picture of the top part of the income distribution.

Consequently, better tax data is required to not only fully and accurately capture top income shares, but also to adjust top incomes for Australian household survey data. This could be achieved by the ATO partnering with the Australian Bureau of Statistics (ABS) to, for instance, retrospectively produce a matched ABS-ATO Survey of Income and Housing

(SIH), using methods similar to the ones already used in the United Kingdom for the Households Below Average Income (HBAI) Survey.¹⁸

Alternatively, the ATO could produce a public-release unit-record sample file with income data that is neither censored (top-coded or bottom-coded) nor perturbed. Even with a 2% (or larger) sample, this could be implemented without unduly threatening the confidentiality of tax filers, although it may require suppression of some demographic data. Indeed, simply removing regional information from the sample file would probably be sufficient to ensure confidentiality. This would greatly increase the ability of researchers to measure top income shares in Australia, as well as better estimate overall levels and trends in Australian income inequality.

IV. References

- ABS (Australian Bureau of Statistics) (2015), ‘Survey of Income and Housing, User Guide, Australia, (Catalogue No. 6553.0)’.
- ABS (Australian Bureau of Statistics) (2016a), ‘Australian System of National Accounts: Concepts, Sources and Methods, 2015, (Catalogue No. 5216.0)’.
- ABS (Australian Bureau of Statistics) (2016b), ‘Australian System of National Accounts, 2015-16, (Catalogue No. 5204.0)’.
- ABS (Australian Bureau of Statistics) (2016c), ‘Australian National Accounts: National Income, Expenditure and Product, Sep 2016, (Catalogue No. 5206.0)’.
- Alvaredo, F., Atkinson, A.B., Piketty, T., and Saez, E. (2015), ‘The World Wealth and Income Database’. Available at: <http://wid.world/>
- Armour, P., Burkhauser, R.V. and Larrimore, J. (2013) “Deconstructing Income and Income Inequality Measures: A Cross-Walk from Market Income to Comprehensive Income.” *American Economic Review*, 103, (3) (May): 173-177.
- Atkinson, A.B. (2005), ‘Top Incomes in the UK over the Twentieth Century’, *Journal of the Royal Statistical Society, Series A*, 168 (2), 325–343.
- Atkinson, A.B., and Leigh, A. (2007), ‘The Distribution of Top Incomes in Australia’, *Economic Record*, 83 (262), 247–261.

¹⁸ Burkhauser et al. (forthcoming, a) show, however, that the method used by the UK Department of Work and Pensions to link tax record data to the HBAI does not result in the HBAI fully capturing the incomes of the top 1%.

- Atkinson, A.B., Piketty, T., and Saez, E. (2011), ‘Top Incomes in the Long Run of History’, *Journal of Economic Literature*, 49 (1), 3–71.
- Burkhauser, R.V., Hahn, M., and Wilkins, R. (2015), ‘Measuring Top Incomes Using Tax Record Data: A Cautionary Tale from Australia’, *Journal of Economic Inequality*, 13 (2), 181–205.
- Burkhauser, R. V., Hérault, N., Jenkins, S., and Wilkins, R. (forthcoming, a) “Survey Under-Coverage of Top Incomes and Estimation of Inequality: What is the Role of the UK’s SPI Adjustment? *Fiscal Studies*.
- Burkhauser, R. V., Hérault, N., Jenkins, S., and Wilkins, R. (forthcoming, b), “Top Incomes and Inequality in the UK: Reconciling Estimates from Household Survey and Tax Return Data.” *Oxford Economic Papers*.
- Corlett, A. (2017) *Unequal Result: Improving and Reconciling the UK’s Household Income Statistics*, Resolution Foundation (December).
- Larrimore, J., Burkhauser, R.V., Auten, G., and Armour, P. (2016), ‘Recent Trends in U.S. Top Income Shares in Tax Record Data Using More Comprehensive Measures of Income Including Accrued Capital Gains’, (Revised June 2017) NBER Working Paper w230007.
- Leigh, A. (2007), ‘How Closely Do Top Income Shares Track Other Measures of Inequality’, *The Economic Journal*, 117 (11), 589–603.
- Piketty, T., Saez, E., and Zucman, G. (forthcoming), ‘Distributional National Accounts: Methods and Estimates for the United States’, *Quarterly Journal of Economics*.

V. Tables and figures

Table 1: Data sources and income concepts we use to construct our series of top income shares

| Years | Data source | Numerator | | Denominator |
|--|----------------|---|---------------------|---|
| | | Income concept | Tax units ranked by | Data source / Income concept |
| AL (Atkinson and Leigh) series | | | | |
| 1921-1968 | ATO tax tables | | | see Atkinson and Leigh (2007) for details |
| 1969 | ATO tax tables | Actual income | Actual income | Income sources from the National Accounts Household Account: Gross mixed income |
| 1970-1977 | ATO tax tables | Net income | Net income | + Compensation of employees + Interest + Dividends |
| 1978-1991 | ATO tax tables | Net income | Taxable income | + Workers' compensation + Social assistance benefits – Interest payable: unincorporated enterprises |
| 1992-2012 | ATO tax tables | Total income or loss | Taxable income | – Consumption of fixed capital |
| BHW1 and BHW1* (Burkhauser, Hahn and Wilkins) series | | | | |
| 1969 | ATO tax tables | Actual income – Capital gains | Actual income | Income sources from the National Accounts Household Account: BHW1 series: As per AL |
| 1970-1977 | ATO tax tables | Net income – Capital gains | Net income | BHW1* series (1983-2012): Denominator as per AL |
| 1978-1986 | ATO Tax tables | Net income – Capital gains | Taxable income | – Employers' social contributions |
| 1987-1991 | ATO tax tables | Net income – Capital gains – Imputation credits | Taxable income | |
| 1992-2012 | ATO tax tables | Total income or loss – Capital gains – Imputation credits | Taxable income | |

| BHW2 (Burkhauser, Hahn and Wilkins) series | | | |
|--|---------------------------|--|---|
| 2000–2012 | Customised tables | Total income or loss – Capital gains – Imputation credits + Exempt foreign employment income + Minor adjustments correcting for income deferral to later years | Income sources from the National Accounts Household Account: Denominator as per BHW1* |
| AUTAX (Australian Unit Tax Record) series | | | |
| 2003–2010 | 1% unit tax record sample | Total income or loss – Capital gains – Imputation credits (primary only as | Income sources from the National Accounts Household Account: |
| 2011–2012 | 2% unit tax record sample | no data on secondary imputation credits in tax record sample) | Denominator as per BHW1* |

Note: See Tables 2 and 3 for a more detailed description of the income sources used in the numerator and denominator.

Table 2: Description of the ATO income sources we use to construct the numerator of our series

| Taxation Statistics item name | Description |
|---|---|
| Total income (or loss) / Actual income | Sum of all taxable income sources before any deductions. |
| Net income | Total income or loss less deductions for expenses incurred in gaining that income. |
| Taxable income | Net income less deductions unrelated to expenses incurred in gaining that income. |
| Imputation credits | |
| Imputation credit primary | Imputation or franking credits directly received. |
| plus Imputation credit subsidiary | Imputation or franking credits indirectly received through partnerships or trusts. |
| plus Australian franking credits from a New Zealand company | Imputation or franking credits received through a New Zealand company that participates in the Australian dividend imputation system. Adjustment made from 2003-04 onwards. |
| Capital gains | |

| | | |
|------|---|--|
| | Net capital gain | Taxable realised capital gains. |
| | Exempt foreign employment income | Foreign income that is not taxed in Australia and is therefore not included in 'Total income or loss'. |
| | Minor adjustments correcting for income deferral to later years | |
| | Net farm management deposits | Current year's income deposited into the Farm Management Deposit Scheme. |
| less | Net farm management withdrawals | Previous years' income withdrawn from the Farm Management Deposit Scheme. |
| plus | Deferred non-commercial business losses PY – PP & NPP | Previous years' deferred non-commercial business losses. First year of this item is 2001-02. |
| less | Total deferred losses | Non-commercial business losses that have been deferred to later years. First year of this item is 2000-01. |

Table 3: Description of the national accounts income sources we use to construct the denominator of our series

| | National Accounts Household Account component | Description |
|------|--|--|
| | Gross mixed income | The surplus or deficit accruing from production by unincorporated enterprises. It includes elements of both compensation of employees (returns on labour inputs) and operating surplus (returns on capital inputs). |
| plus | Compensation of employees | The total remuneration, in cash or in kind, payable by an enterprise to an employee in return for work done by the employee during the accounting period. It is further classified into two sub-components: wages and salaries; and employers' social contributions. Compensation of employees is not payable in respect of unpaid work undertaken voluntarily, including the work done by members of a household within an unincorporated enterprise owned by the same household. Compensation of employees excludes any taxes payable by the employer on the wage and salary bill (e.g., payroll tax). |

| | | |
|------|---|---|
| plus | Property income receivable: Interest | |
| plus | Property income receivable: Dividends | |
| plus | Secondary income receivable: Social benefits receivable: Workers' compensation | |
| plus | Secondary income receivable: Social benefits receivable: Social assistance benefits | Includes current transfers to persons from general government in return for which no services are rendered or goods supplied. Principal components include: scholarships; maternity, sickness and unemployment benefits; family allowances; and widows', age, invalid and repatriation pensions. |
| less | Property income payable: Interest payable: Unincorporated enterprises | |
| less | Household sector consumption of fixed capital | The reduction in the value of fixed assets used in production during the accounting period resulting from physical deterioration, normal obsolescence or normal accidental damage. Unforeseen obsolescence, major catastrophes and the depletion of natural resources are not taken into account. |
| = | AL and BHW1 income control total | |

| | | |
|------|--|---|
| less | Employers' social contributions (separately available from 1983 onwards) | Includes contributions to superannuation made by employers and payments of workers' compensation premiums. |
| = | BHW1*, BHW2 and AUTAX income control total | |

Figure 1: Comparing alternative series of the top 1 percent income share from 1921 to 2012

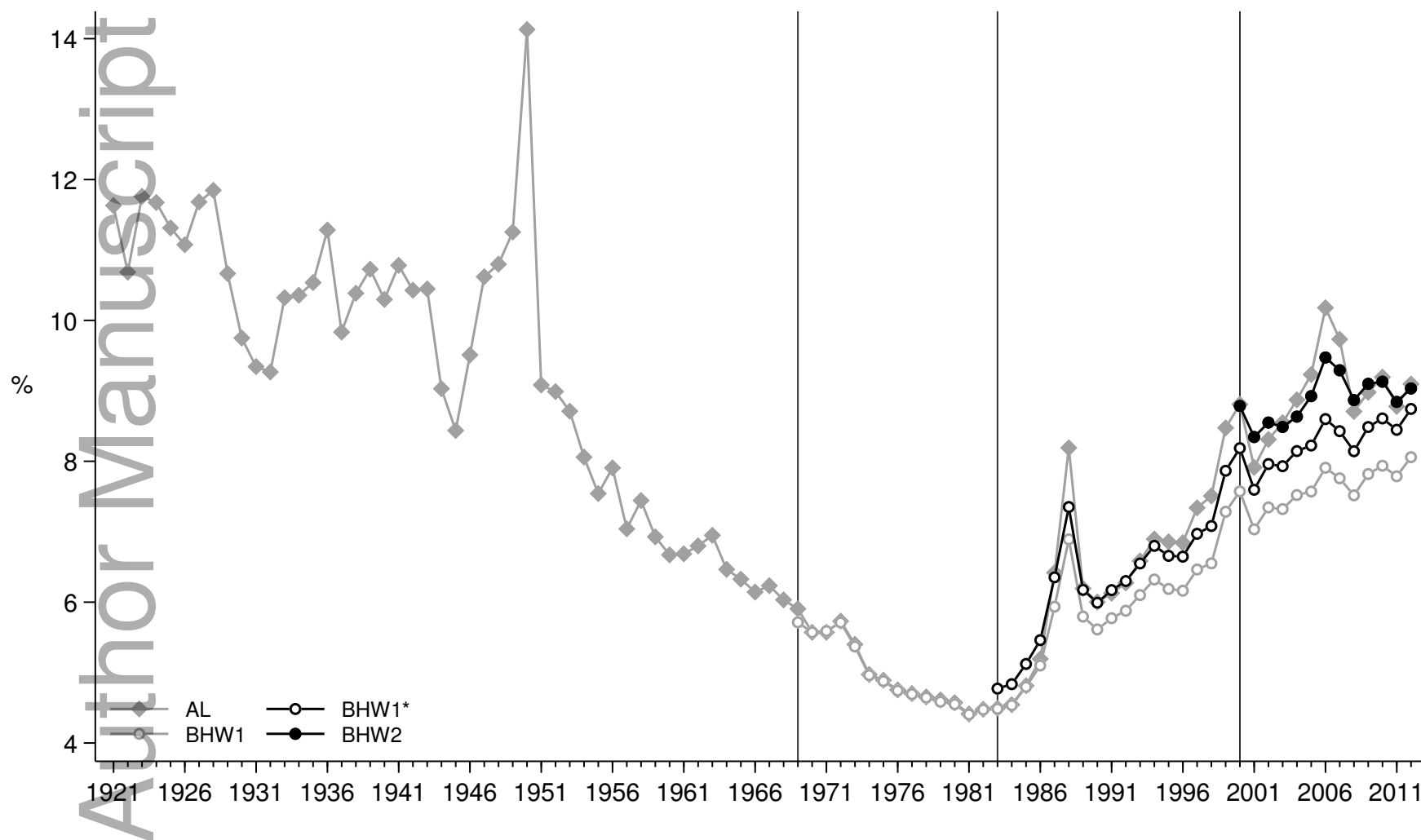
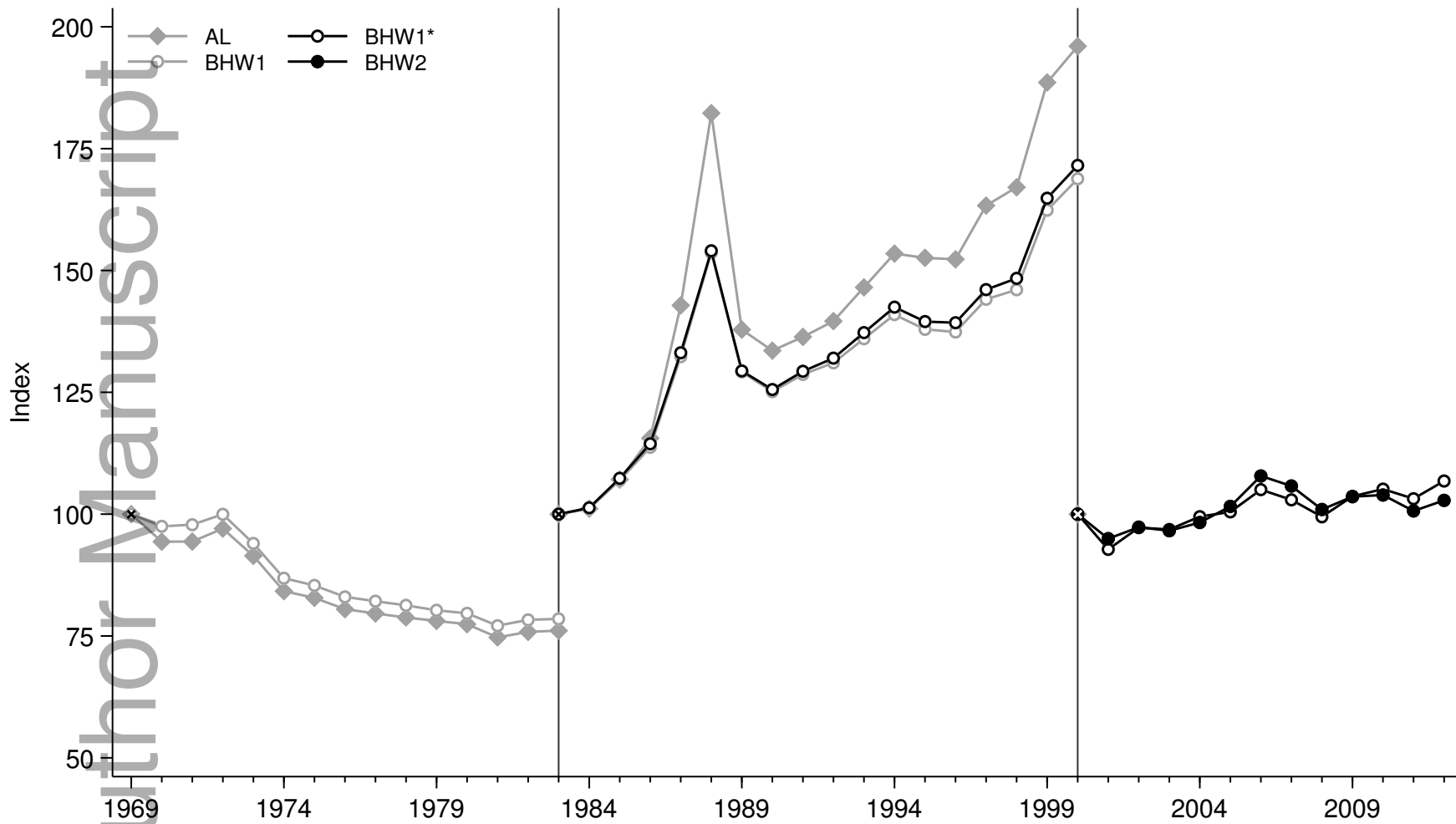
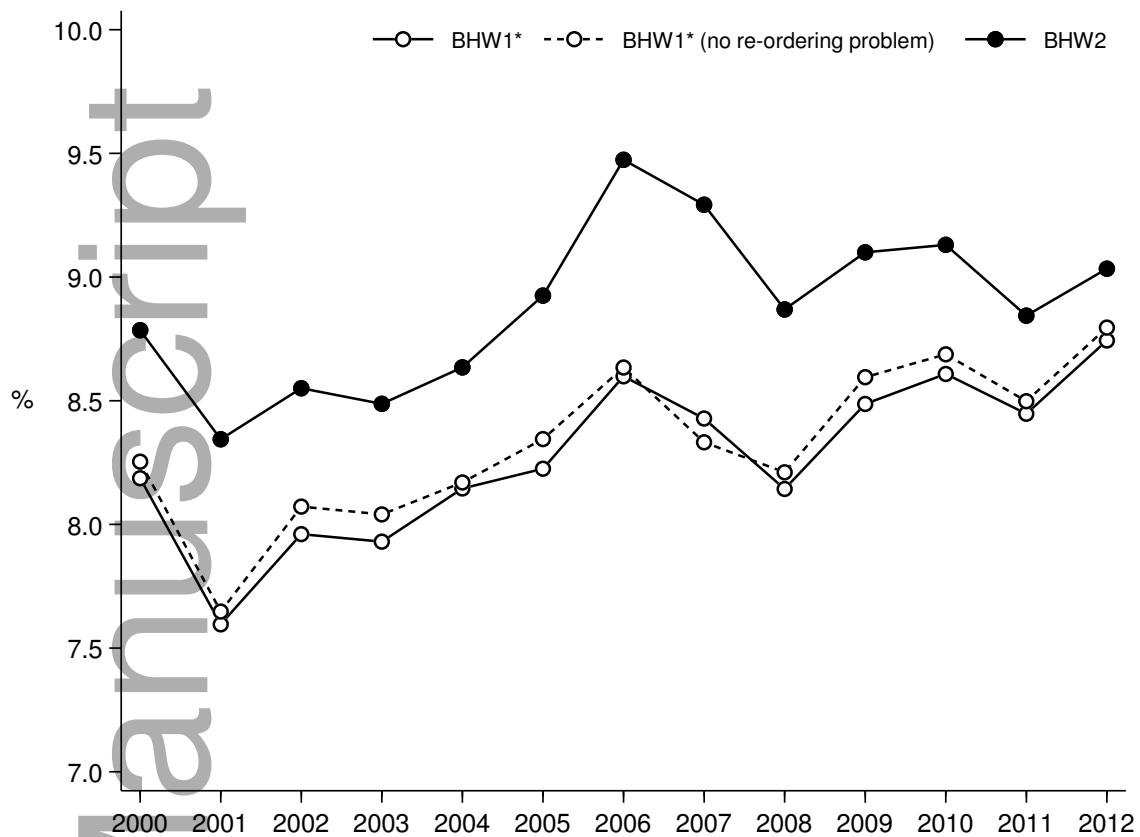


Figure 2: Comparing the trends of alternative series of the top 1 percent income share



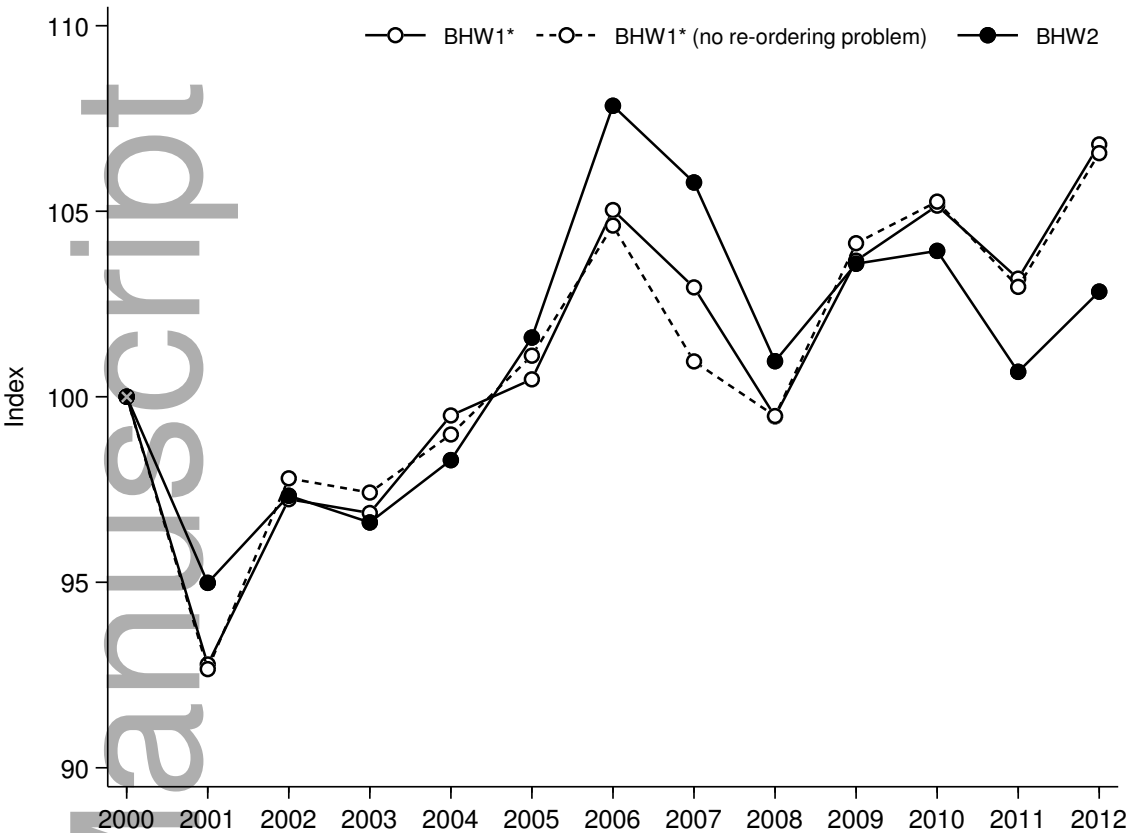
Note: The figure presents the AL and BHW1 series indexed to 100 in 1969 (up to 1983), the AL, BHW1 and BHW1* series indexed to 100 in 1983 (up to 2000), and the BHW1* and BHW2 series indexed to 100 in 2000 (up to 2012).

Figure 3: Comparing the BHW1* and BHW2 series of the top 1 percent income share from 2000 to 2012



Notes: BHW1* (no re-ordering problem) has been calculated as BHW1* plus the values in the 'Re-ordering' column in Appendix Table B6. This series shows how series BHW1* would have looked like if our method of calculating BHW1* properly re-ordered individuals when removing imputation credits and capital gains from the published tax tables.

Figure 4: Comparing the trends of the BHW1* and BHW2 series of the top 1 percent income share



Notes: See Figure 3. The figure presents the BHW1*, BHW1* (no re-ordering problem) and BHW2 series indexed to 100 in 2000 over the period 2000 to 2012.

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Figure 5: Comparing the BHW2 and AUTAX series of the top 1 percent income share from 2000 to 2012

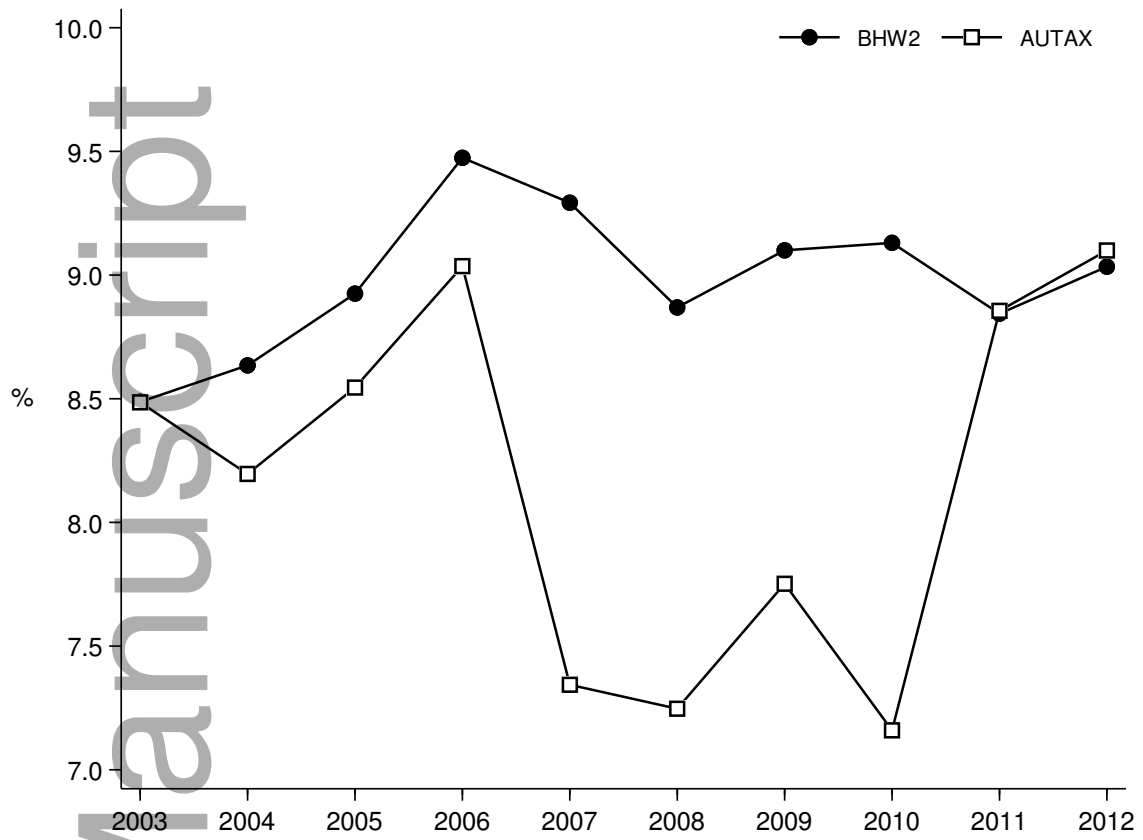


Figure 6: Comparing the BHW2 and the AUTAX series of the top 10–5, 5–1, 1–0.5, 0.5, 0.5–0.1 and 0.1 percent income shares from 2000 to 2012

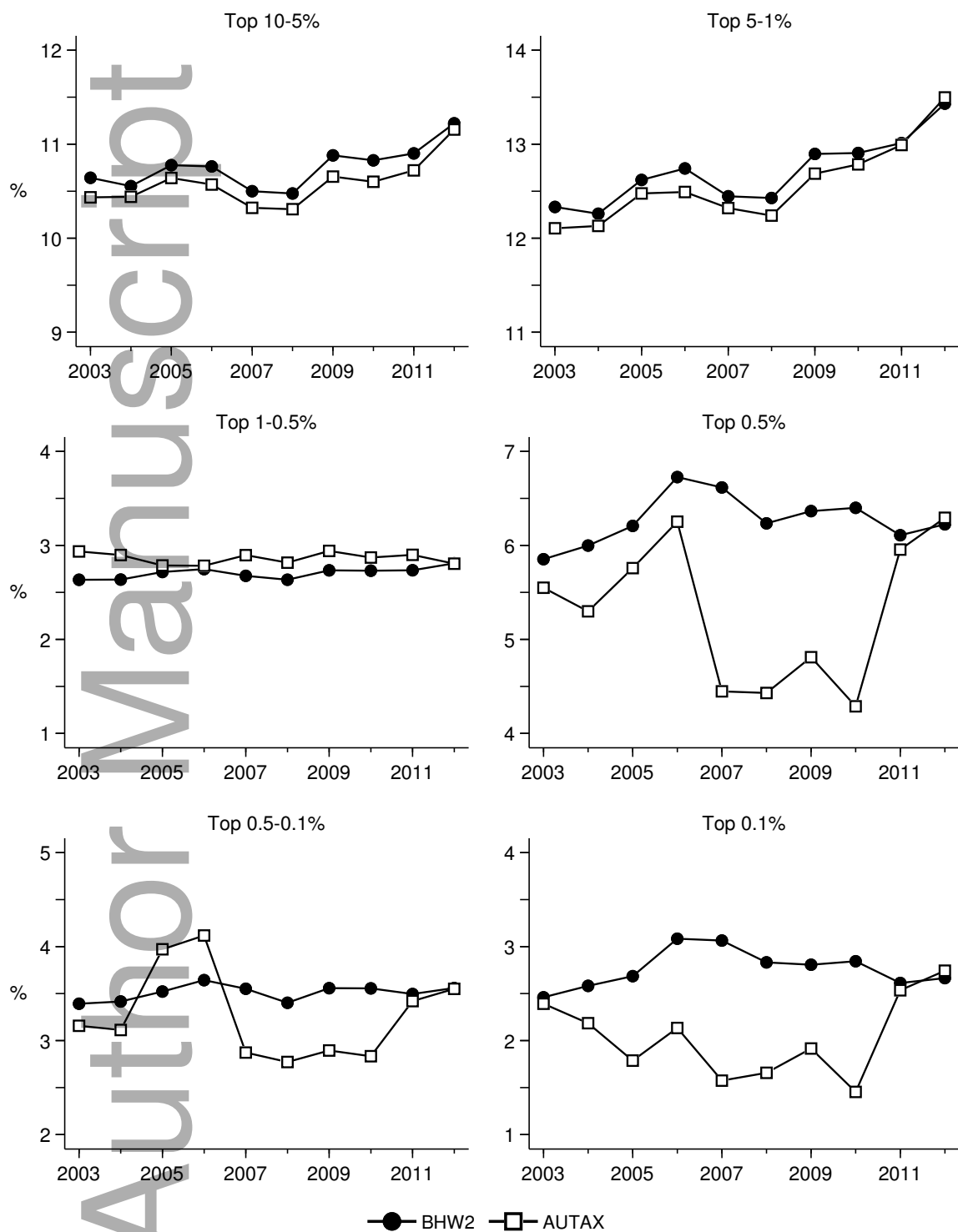
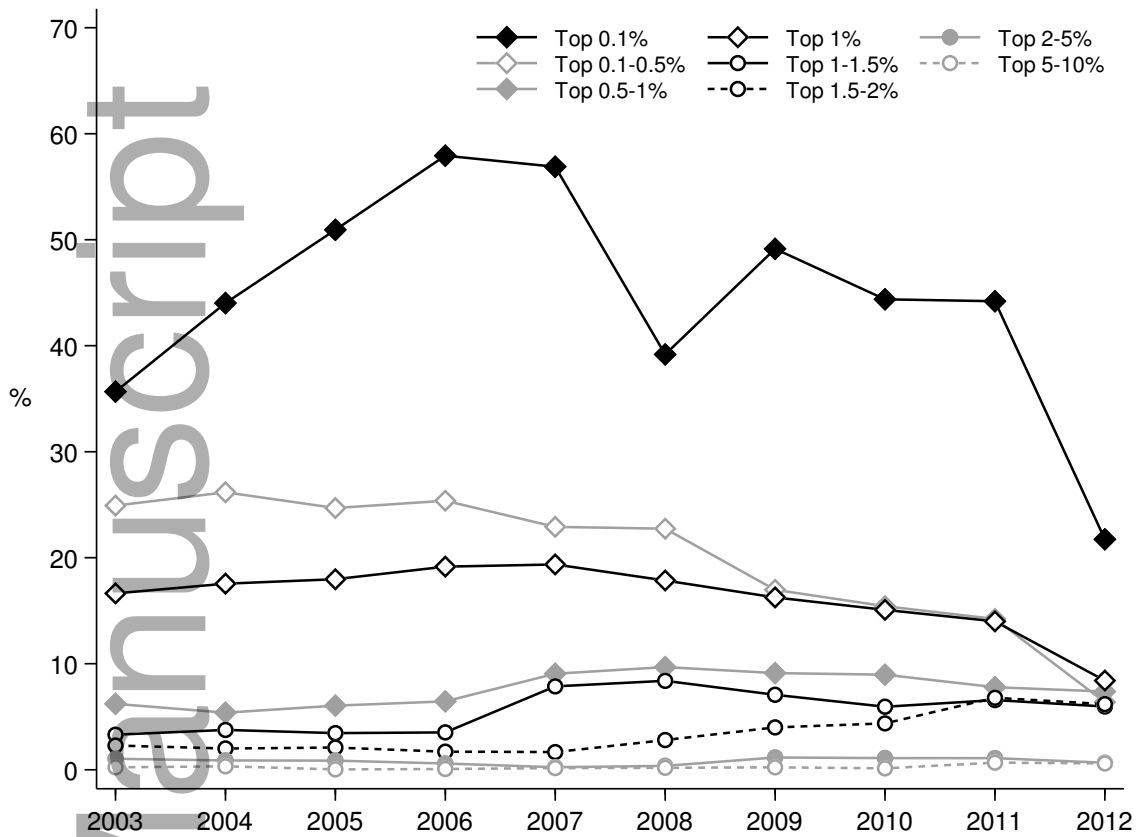
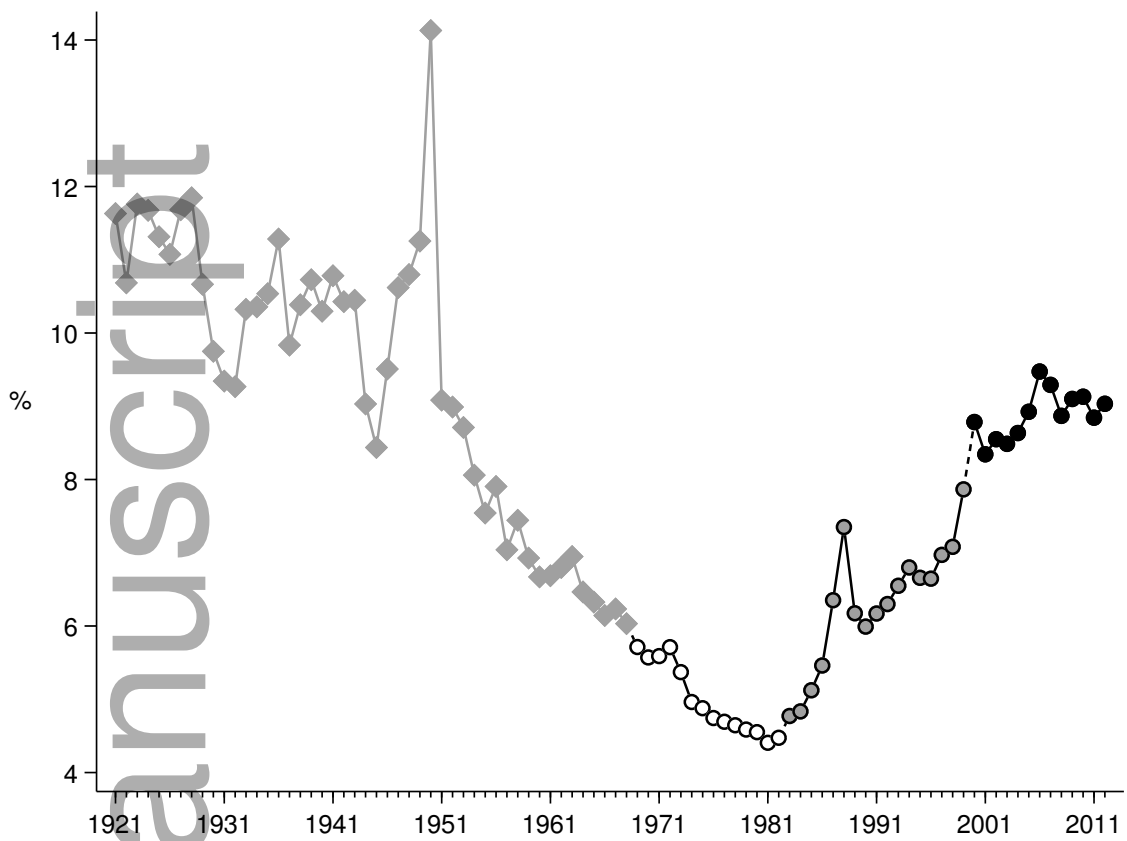


Figure 7: Proportion of individuals in each top income group with top-coded income components—AUTAX unit record file



Notes: This figure shows the proportion of individuals within a top income group—such as the top 1%—that have a least one top-coded income source. For each income source of ‘Total income or loss’, we identify the top-codes as follows. We first restrict the search to the top 10% of values of the income source. We then, find all values with a frequency of 10 or higher. If we find three or fewer values, we identify these values as top-codes. If we find more than three values, we identify the three most frequent values as top-codes. This procedure does not perform well for aggregate income sources that are made up of less-aggregated income sources that are top-coded. For example, the unit record samples only contain a ‘Wages and salaries’ income item that consists of up to five different wages or salary income sources. Each of these five wages or salary components has been top-coded. This means that, for individuals with more than two jobs during the year, we cannot identify any top-codes. Because the unit record samples make it impossible to identify all top-codes, the estimates shown should be regarded as lower bounds.

Figure 8: The top 1 percent income share from 1921 to 2012



Notes: This figure shows the AL series from 1921 to 1968, the BHW1 series from 1969 to 1982, the BHW1* series from 1983 to 1999, and the BHW2 series from 2000 to 2012.

Appendix A: Additional tables and figures

Table A1: Key indicative features of the tax tables used for the Atkinson and Leigh (2007) method

| | Total number of income bins | Lower bound of bin in which 99th percentile falls (\$) | Upper bound of bin in which 99th percentile falls (\$) | Estimated value of 99th percentile (\$) | Number of persons in bin in which 99th percentile falls | Number of persons in top 1% |
|------|-----------------------------------|--|--|---|--|-----------------------------------|
| 1969 | 36 | 10,000 | 12,000 | 10,591 | 39,147 | 87,165 |
| 1970 | 38 | 10,000 | 15,000 | 11,272 | 87,323 | 89,017 |
| 1971 | 38 | 10,000 | 15,000 | 11,936 | 124,009 | 93,200 |
| 1972 | 35 | 10,000 | 15,000 | 14,027 | 166,167 | 95,109 |
| 1973 | 35 | 15,000 | 20,000 | 16,290 | 71,515 | 96,918 |
| 1974 | 28 | 15,000 | 20,000 | 18,392 | 117,121 | 98,983 |
| 1975 | 26 | 20,000 | 25,000 | 20,478 | 54,709 | 100,734 |
| 1976 | 29 | 20,000 | 25,000 | 22,488 | 82,391 | 102,460 |
| 1977 | 29 | 20,000 | 24,000 | 23,684 | 89,547 | 104,286 |
| 1978 | 24 | 24,000 | 26,000 | 25,915 | 31,968 | 106,162 |
| 1979 | 27 | 28,000 | 30,000 | 29,306 | 23,233 | 107,973 |
| 1980 | 27 | 30,000 | 35,000 | 33,266 | 63,598 | 109,844 |
| 1981 | 27 | 35,000 | 40,000 | 35,376 | 52,331 | 111,977 |
| 1982 | 27 | 35,000 | 40,000 | 39,025 | 78,118 | 114,393 |
| 1983 | 27 | 35,000 | 40,000 | 39,934 | 101,801 | 116,425 |
| 1984 | 27 | 40,000 | 50,000 | 45,612 | 89,941 | 118,436 |
| 1985 | 32 | 40,000 | 50,000 | 48,747 | 136,014 | 120,628 |
| 1986 | 32 | 50,000 | 100,000 | 53,781 | 127,266 | 123,188 |
| 1987 | 31 | 50,000 | 100,000 | 62,307 | 196,258 | 125,765 |
| 1988 | 31 | 50,000 | 100,000 | 72,816 | 274,843 | 128,331 |
| 1989 | 26 | 70,000 | 80,000 | 75,998 | 43,798 | 130,895 |
| 1990 | 26 | 70,000 | 80,000 | 75,949 | 46,134 | 133,101 |
| 1991 | 26 | 70,000 | 80,000 | 77,472 | 51,047 | 134,985 |
| 1992 | 26 | 70,000 | 80,000 | 78,832 | 58,923 | 136,656 |
| 1993 | 12 | 50,000 | 500,000 | 72,587 | 630,435 | 138,036 |
| 1994 | 10 | 50,000 | 100,000 | 92,309 | 628,622 | 139,547 |
| 1995 | 10 | 50,000 | 100,000 | 95,553 | 748,043 | 141,293 |
| 1996 | 16 | 70,000 | 100,000 | 97,601 | 216,960 | 143,302 |
| 1997 | 16 | 100,000 | 200,000 | 103,328 | 121,958 | 145,146 |
| 1998 | 16 | 100,000 | 200,000 | 109,229 | 134,892 | 146,911 |

| | | | | | | |
|------|----|---------|---------|---------|---------|---------|
| 1999 | 16 | 100,000 | 200,000 | 120,948 | 163,339 | 148,822 |
| 2000 | 16 | 100,000 | 200,000 | 128,949 | 191,885 | 150,855 |
| 2001 | 16 | 100,000 | 200,000 | 131,079 | 210,913 | 153,145 |
| 2002 | 16 | 100,001 | 200,001 | 136,450 | 240,249 | 155,306 |
| 2003 | 16 | 100,001 | 200,001 | 151,275 | 281,515 | 157,511 |
| 2004 | 16 | 100,001 | 200,001 | 164,994 | 330,395 | 159,585 |
| 2005 | 22 | 150,001 | 200,001 | 178,849 | 87,770 | 161,935 |
| 2006 | 22 | 150,001 | 200,001 | 190,871 | 109,225 | 164,486 |
| 2007 | 22 | 150,001 | 200,001 | 193,069 | 125,325 | 167,808 |
| 2008 | 22 | 180,001 | 250,001 | 192,665 | 94,295 | 171,483 |
| 2009 | 22 | 180,001 | 250,001 | 205,778 | 107,560 | 175,336 |
| 2010 | 22 | 180,001 | 250,001 | 221,777 | 131,890 | 178,331 |
| 2011 | 22 | 180,001 | 250,001 | 230,643 | 157,035 | 181,064 |
| 2012 | 21 | 180,001 | 250,001 | 238,500 | 184,195 | 184,277 |

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Table A2: Alternative estimates of top income shares

| | Top 0.1% | | | | | Top 0.5% | | | | |
|------|----------|------|-------|------|-------|----------|------|-------|------|-------|
| | AL | BHW1 | BHW1* | BHW2 | AUTAX | AL | BHW1 | BHW1* | BHW2 | AUTAX |
| 1969 | 1.34 | 1.23 | | | | 3.78 | 3.61 | | | |
| 1970 | 1.19 | 1.19 | | | | 3.52 | 3.52 | | | |
| 1971 | 1.17 | 1.18 | | | | 3.49 | 3.50 | | | |
| 1972 | 1.22 | 1.21 | | | | 3.60 | 3.59 | | | |
| 1973 | 1.11 | 1.10 | | | | 3.37 | 3.35 | | | |
| 1974 | 1.01 | 1.01 | | | | 3.09 | 3.08 | | | |
| 1975 | 1.05 | 1.04 | | | | 3.06 | 3.05 | | | |
| 1976 | 1.00 | 0.99 | | | | 2.97 | 2.96 | | | |
| 1977 | 1.01 | 1.01 | | | | 2.94 | 2.94 | | | |
| 1978 | 0.98 | 0.98 | | | | 2.89 | 2.88 | | | |
| 1979 | 0.97 | 0.96 | | | | 2.84 | 2.82 | | | |
| 1980 | 0.97 | 0.96 | | | | 2.81 | 2.80 | | | |
| 1981 | 0.92 | 0.92 | | | | 2.70 | 2.70 | | | |
| 1982 | 0.96 | 0.95 | | | | 2.75 | 2.75 | | | |
| 1983 | 0.98 | 0.98 | 1.04 | | | 2.78 | 2.77 | 2.95 | | |
| 1984 | 0.98 | 0.98 | 1.04 | | | 2.83 | 2.82 | 3.01 | | |
| 1985 | 1.10 | 1.09 | 1.16 | | | 3.06 | 3.04 | 3.25 | | |
| 1986 | 1.24 | 1.19 | 1.27 | | | 3.35 | 3.27 | 3.50 | | |
| 1987 | 1.82 | 1.54 | 1.64 | | | 4.36 | 3.98 | 4.26 | | |
| 1988 | 2.91 | 2.07 | 2.20 | | | 5.88 | 4.72 | 5.03 | | |
| 1989 | 1.68 | 1.47 | 1.57 | | | 4.12 | 3.79 | 4.04 | | |
| 1990 | 1.63 | 1.41 | 1.51 | | | 3.98 | 3.66 | 3.91 | | |
| 1991 | 1.66 | 1.46 | 1.56 | | | 4.06 | 3.76 | 4.02 | | |
| 1992 | 1.73 | 1.50 | 1.61 | | | 4.17 | 3.84 | 4.11 | | |
| 1993 | 1.91 | 1.64 | 1.76 | | | 4.42 | 3.98 | 4.27 | | |
| 1994 | 2.09 | 1.77 | 1.90 | | | 4.67 | 4.12 | 4.43 | | |
| 1995 | 2.12 | 1.77 | 1.90 | | | 4.65 | 4.02 | 4.33 | | |
| 1996 | 1.90 | 1.55 | 1.67 | | | 4.64 | 4.05 | 4.37 | | |
| 1997 | 2.11 | 1.66 | 1.79 | | | 5.02 | 4.30 | 4.64 | | |
| 1998 | 2.24 | 1.74 | 1.89 | | | 5.18 | 4.42 | 4.77 | | |
| 1999 | 2.83 | 2.15 | 2.32 | | | 6.02 | 5.06 | 5.46 | | |
| 2000 | 2.99 | 2.28 | 2.46 | 2.66 | | 6.28 | 5.26 | 5.69 | 6.09 | |
| 2001 | 2.39 | 1.96 | 2.11 | 2.35 | | 5.47 | 4.80 | 5.18 | 5.69 | |
| 2002 | 2.53 | 2.08 | 2.25 | 2.43 | | 5.78 | 5.03 | 5.45 | 5.86 | |
| 2003 | 2.69 | 2.07 | 2.24 | 2.46 | 2.39 | 6.01 | 4.99 | 5.41 | 5.85 | 5.55 |
| 2004 | 2.93 | 2.12 | 2.30 | 2.58 | 2.19 | 6.35 | 5.11 | 5.53 | 6.00 | 5.30 |
| 2005 | 3.09 | 2.14 | 2.32 | 2.69 | 1.79 | 6.60 | 5.22 | 5.67 | 6.21 | 5.76 |
| 2006 | 3.72 | 2.40 | 2.61 | 3.08 | 2.13 | 7.51 | 5.57 | 6.06 | 6.73 | 6.25 |
| 2007 | 3.56 | 2.33 | 2.53 | 3.06 | 1.57 | 7.18 | 5.43 | 5.90 | 6.62 | 4.45 |
| 2008 | 2.96 | 2.26 | 2.45 | 2.83 | 1.66 | 6.24 | 5.24 | 5.68 | 6.23 | 4.43 |
| 2009 | 2.97 | 2.32 | 2.52 | 2.81 | 1.92 | 6.41 | 5.44 | 5.90 | 6.37 | 4.81 |
| 2010 | 3.17 | 2.40 | 2.61 | 2.84 | 1.45 | 6.63 | 5.53 | 6.00 | 6.40 | 4.29 |
| 2011 | 2.84 | 2.24 | 2.43 | 2.61 | 2.54 | 6.22 | 5.34 | 5.79 | 6.11 | 5.96 |
| 2012 | 2.97 | 2.32 | 2.51 | 2.66 | 2.74 | 6.44 | 5.51 | 5.97 | 6.22 | 6.29 |

Table A2 continued: Alternative estimates of top income shares

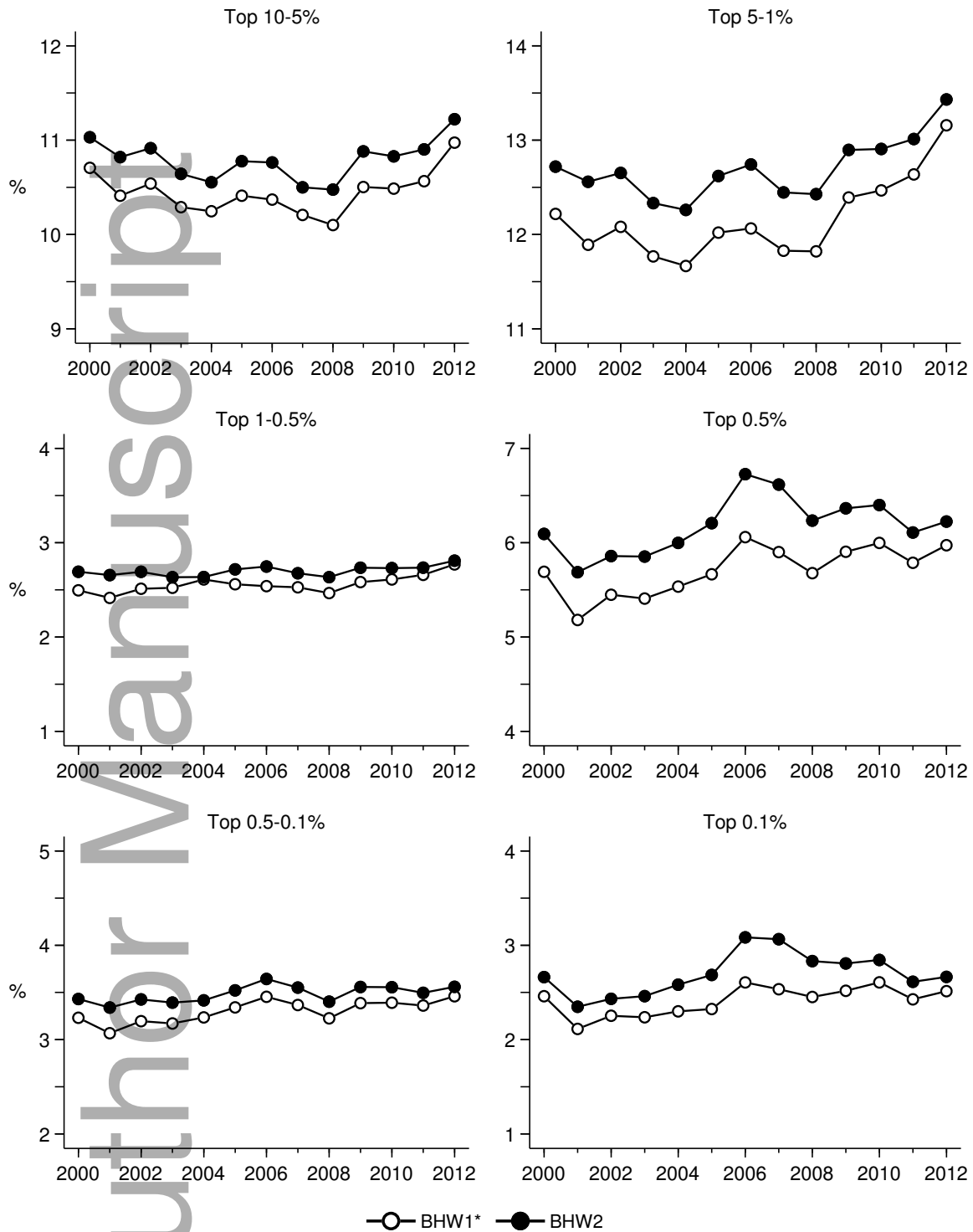
| | Top 1% | | | | | Top 5% | | | | |
|------|--------|------|-------|------|-------|--------|-------|-------|-------|-------|
| | AL | BHW1 | BHW1* | BHW2 | AUTAX | AL | BHW1 | BHW1* | BHW2 | AUTAX |
| 1969 | 5.91 | 5.71 | | | | 16.64 | 16.43 | | | |
| 1970 | 5.57 | 5.57 | | | | 16.29 | 16.29 | | | |
| 1971 | 5.57 | 5.59 | | | | 16.55 | 16.57 | | | |
| 1972 | 5.73 | 5.71 | | | | 16.54 | 16.51 | | | |
| 1973 | 5.40 | 5.37 | | | | 15.93 | 15.89 | | | |
| 1974 | 4.97 | 4.96 | | | | 15.12 | 15.10 | | | |
| 1975 | 4.89 | 4.88 | | | | 14.91 | 14.89 | | | |
| 1976 | 4.75 | 4.74 | | | | 14.64 | 14.62 | | | |
| 1977 | 4.70 | 4.69 | | | | 14.56 | 14.55 | | | |
| 1978 | 4.65 | 4.65 | | | | 14.47 | 14.46 | | | |
| 1979 | 4.61 | 4.59 | | | | 14.52 | 14.49 | | | |
| 1980 | 4.57 | 4.55 | | | | 14.62 | 14.59 | | | |
| 1981 | 4.41 | 4.41 | | | | 14.49 | 14.48 | | | |
| 1982 | 4.48 | 4.47 | | | | 14.81 | 14.80 | | | |
| 1983 | 4.49 | 4.49 | 4.77 | | | 14.55 | 14.54 | 15.47 | | |
| 1984 | 4.54 | 4.54 | 4.83 | | | 14.58 | 14.57 | 15.53 | | |
| 1985 | 4.81 | 4.80 | 5.12 | | | 14.99 | 14.97 | 15.98 | | |
| 1986 | 5.19 | 5.10 | 5.46 | | | 15.57 | 15.45 | 16.54 | | |
| 1987 | 6.42 | 5.94 | 6.35 | | | 17.27 | 16.67 | 17.84 | | |
| 1988 | 8.19 | 6.89 | 7.35 | | | 19.32 | 17.71 | 18.89 | | |
| 1989 | 6.20 | 5.80 | 6.17 | | | 16.92 | 16.36 | 17.43 | | |
| 1990 | 6.00 | 5.61 | 5.99 | | | 16.60 | 16.08 | 17.17 | | |
| 1991 | 6.13 | 5.77 | 6.17 | | | 17.09 | 16.59 | 17.74 | | |
| 1992 | 6.27 | 5.88 | 6.30 | | | 17.33 | 16.77 | 17.97 | | |
| 1993 | 6.58 | 6.10 | 6.55 | | | 17.76 | 17.03 | 18.29 | | |
| 1994 | 6.90 | 6.32 | 6.80 | | | 18.19 | 17.30 | 18.60 | | |
| 1995 | 6.86 | 6.19 | 6.66 | | | 18.08 | 17.07 | 18.37 | | |
| 1996 | 6.84 | 6.16 | 6.65 | | | 17.96 | 16.92 | 18.25 | | |
| 1997 | 7.34 | 6.46 | 6.97 | | | 18.75 | 17.49 | 18.86 | | |
| 1998 | 7.51 | 6.55 | 7.08 | | | 18.87 | 17.56 | 18.98 | | |
| 1999 | 8.47 | 7.28 | 7.87 | | | 20.03 | 18.52 | 20.00 | | |
| 2000 | 8.81 | 7.57 | 8.19 | 8.79 | | 20.48 | 18.87 | 20.40 | 21.50 | |
| 2001 | 7.91 | 7.03 | 7.60 | 8.34 | | 19.27 | 18.05 | 19.49 | 20.90 | |
| 2002 | 8.31 | 7.35 | 7.96 | 8.55 | | 19.85 | 18.49 | 20.04 | 21.20 | |
| 2003 | 8.55 | 7.32 | 7.93 | 8.49 | 8.49 | 19.95 | 18.19 | 19.70 | 20.82 | 20.59 |
| 2004 | 8.87 | 7.52 | 8.15 | 8.63 | 8.20 | 20.28 | 18.29 | 19.81 | 20.90 | 20.33 |
| 2005 | 9.23 | 7.57 | 8.23 | 8.93 | 8.55 | 20.98 | 18.64 | 20.25 | 21.54 | 21.02 |
| 2006 | 10.18 | 7.91 | 8.60 | 9.47 | 9.04 | 22.27 | 19.00 | 20.66 | 22.22 | 21.53 |
| 2007 | 9.73 | 7.76 | 8.43 | 9.29 | 7.34 | 21.43 | 18.65 | 20.26 | 21.74 | 19.66 |
| 2008 | 8.71 | 7.52 | 8.14 | 8.87 | 7.25 | 20.10 | 18.43 | 19.96 | 21.30 | 19.49 |
| 2009 | 8.98 | 7.82 | 8.49 | 9.10 | 7.75 | 20.94 | 19.24 | 20.88 | 22.00 | 20.44 |
| 2010 | 9.20 | 7.94 | 8.61 | 9.13 | 7.16 | 21.24 | 19.43 | 21.08 | 22.04 | 19.94 |
| 2011 | 8.78 | 7.79 | 8.45 | 8.84 | 8.86 | 20.92 | 19.44 | 21.08 | 21.86 | 21.85 |
| 2012 | 9.10 | 8.06 | 8.74 | 9.03 | 9.10 | 21.71 | 20.18 | 21.90 | 22.47 | 22.60 |

Table A2 continued: Alternative estimates of top income shares

Top 10%

| | AL | BHW1 | BHW1* | BHW2 | AUTAX |
|------|-------|-------|-------|-------|-------|
| 1969 | 26.32 | 26.10 | | | |
| 1970 | 26.04 | 26.04 | | | |
| 1971 | 26.57 | 26.59 | | | |
| 1972 | 26.27 | 26.24 | | | |
| 1973 | 25.46 | 25.42 | | | |
| 1974 | 24.64 | 24.62 | | | |
| 1975 | 24.33 | 24.31 | | | |
| 1976 | 24.03 | 24.01 | | | |
| 1977 | 24.02 | 24.00 | | | |
| 1978 | 23.90 | 23.88 | | | |
| 1979 | 24.05 | 24.01 | | | |
| 1980 | 24.24 | 24.21 | | | |
| 1981 | 24.20 | 24.19 | | | |
| 1982 | 24.77 | 24.76 | | | |
| 1983 | 24.30 | 24.29 | 25.84 | | |
| 1984 | 24.38 | 24.37 | 25.97 | | |
| 1985 | 24.87 | 24.85 | 26.53 | | |
| 1986 | 25.62 | 25.48 | 27.28 | | |
| 1987 | 27.59 | 26.92 | 28.81 | | |
| 1988 | 29.49 | 27.80 | 29.65 | | |
| 1989 | 26.82 | 26.18 | 27.89 | | |
| 1990 | 26.49 | 25.90 | 27.64 | | |
| 1991 | 27.32 | 26.74 | 28.59 | | |
| 1992 | 27.55 | 26.91 | 28.84 | | |
| 1993 | 27.99 | 27.18 | 29.18 | | |
| 1994 | 28.43 | 27.45 | 29.52 | | |
| 1995 | 28.10 | 27.01 | 29.07 | | |
| 1996 | 27.87 | 26.71 | 28.81 | | |
| 1997 | 28.84 | 27.40 | 29.55 | | |
| 1998 | 28.94 | 27.41 | 29.63 | | |
| 1999 | 30.19 | 28.45 | 30.72 | | |
| 2000 | 30.59 | 28.78 | 31.11 | 32.54 | |
| 2001 | 29.10 | 27.69 | 29.90 | 31.72 | |
| 2002 | 29.80 | 28.22 | 30.58 | 32.12 | |
| 2003 | 29.76 | 27.69 | 29.99 | 31.46 | 31.03 |
| 2004 | 30.08 | 27.75 | 30.06 | 31.45 | 30.77 |
| 2005 | 30.90 | 28.22 | 30.66 | 32.32 | 31.66 |
| 2006 | 32.32 | 28.54 | 31.03 | 32.98 | 32.10 |
| 2007 | 31.19 | 28.04 | 30.46 | 32.24 | 29.99 |
| 2008 | 29.65 | 27.75 | 30.07 | 31.77 | 29.80 |
| 2009 | 30.82 | 28.91 | 31.38 | 32.88 | 31.09 |
| 2010 | 31.09 | 29.10 | 31.56 | 32.87 | 30.54 |
| 2011 | 30.83 | 29.18 | 31.65 | 32.76 | 32.57 |
| 2012 | 32.05 | 30.30 | 32.88 | 33.69 | 33.75 |

Figure A1: Comparing the BHW1* and BHW2 series of the top 10–5, 5–1, 1–0.5, 0.5, 0.5–0.1 and 0.1 percent income shares from 2000–2012



Appendix B: Decomposition of sources of differences between AL and BHW1, and between BHW1 and BHW2

The separate contributions of dividend imputation credits (1) and capital gains (2) to the differences between AL and BHW1 in top income shares estimates can be identified as

follows:

$$S_{\text{BHW1}} - S_{\text{AL}} = S_{\text{BHW1}} - S_{\text{AL}}^{\text{Ex-G}} \quad (1)$$

$$+ S_{\text{AL}}^{\text{Ex-G}} - S_{\text{AL}} \quad (2)$$

where:

- S_{BHW1} is the BHW1 estimated income share (the income share excluding dividend imputation credits and capital gains estimated from the published tax tables sorted by taxable income);
- S_{AL} is the AL estimated income share (the income share including dividend imputation credits and capital gains estimated from the published tax tables sorted by taxable income); and
- $S_{\text{AL}}^{\text{Ex-G}}$ is the AL estimated income share excluding capital gains (but including dividend imputation credits), estimated from the published tax tables sorted by taxable income.

Appendix Tables B1 to B5 respectively undertake this decomposition exercise for the top 1 percent, 0.1 percent, 0.5 percent, 5 percent and 10 percent over the 1969 to 2012 period.

With the available data, it is also possible to decompose the sources of the differences in top income shares estimates between BHW1 and BHW2 into three components. These comprise differences due to:

- (1) lack of ‘re-ordering’ of individuals in tax tables in BHW1 due to the exclusion of dividend imputation credits and capital gains;
- (2) inclusion of employers’ social contributions in the control total for income in BHW1 (see Table 1 and 2 of main paper); and
- (3) the combined effects of other factors. These comprise (a) sorting of individuals in BHW1 by ATO Taxable Income ranges rather than Total Income ranges; (b) the errors in BHW1 in the imputation of income of individuals within the income range in which the bottom of the top income group falls; (c) the BHW2 minor adjustments to the gross taxable income measure (described in Table 1); and (d) revisions (additions) to

the tax data subsequent to publication of the earlier tax tables.¹⁹

Using the BHW1 series, BHW2 series, and other series based on the customised tax tables obtained from the ATO, the contributions of the three components can be identified as follows:

$$S_{BHW2} - S_{BHW1} = (S_{CUST}^{Ex_G,I} - S_{CUST}^{Inc_G,I}) - (S_{BHW1} - S_{AL}) \quad (1)$$

$$+ S_{BHW2} - S_{CUST}^{Ex_G,I} \quad (2)$$

$$+ S_{CUST}^{Inc_G,I} - S_{AL} \quad (3)$$

where:

- S_{BHW2} is the BHW2 estimated income share (the income share excluding dividend imputation credits and capital gains estimated from the customised tax tables obtained from the ATO, and using the revised control total for income).
- S_{BHW1} is the BHW1 estimated income share (the income share excluding dividend imputation credits and capital gains estimated from the published tax tables sorted by Taxable Income, and using the BHW1 income control total);
- $S_{CUST}^{Ex_G,I}$ is the income share excluding dividend imputation credits and capital gains estimated from the **customised** tax tables obtained from the ATO, using the BHW1 income control total;
- $S_{CUST}^{Inc_G,I}$ is the income share including dividend imputation credits and capital gains estimated from the **customised** tax tables obtained from the ATO using the BHW1 income control total; and
- S_{AL} is the AL estimated income share (the income share including dividend imputation credits and capital gains estimated from the published tax tables sorted by taxable income).

Tables B6 to B10 respectively undertake this decomposition exercise for the top 1 percent, 0.1 percent, 0.5 percent, 5 percent and 10 percent over the 2000 to 2012 period.

¹⁹ It is possible to separately identify the impact of 3a from 2006-07, when suitably detailed tax tables sorted by total income are available. (The number of bins doubled from 2006-07.) For these years, we find that this factor generally accounts for 10-20% of component (3).

Table B1: Decomposition of differences between AL and BHW1—Top 1 percent income share

| | AL estimate | BHW1 estimate | Difference (BHW1 minus AL) | Difference due to... | |
|------|----------------|------------------|----------------------------------|---|--|
| | | | | (1) Exclusion of dividend imputation credits from BHW1 | (2) Exclusion of taxable realised capital gains from BHW1 |
| 1969 | 5.91 | 5.71 | -0.19 | 0.00 | -0.19 |
| 1970 | 5.57 | 5.57 | 0.00 | 0.00 | 0.00 |
| 1971 | 5.57 | 5.59 | 0.02 | 0.00 | 0.02 |
| 1972 | 5.73 | 5.71 | -0.02 | 0.00 | -0.02 |
| 1973 | 5.40 | 5.37 | -0.03 | 0.00 | -0.03 |
| 1974 | 4.97 | 4.96 | -0.01 | 0.00 | -0.01 |
| 1975 | 4.89 | 4.88 | -0.01 | 0.00 | -0.01 |
| 1976 | 4.75 | 4.74 | -0.01 | 0.00 | -0.01 |
| 1977 | 4.70 | 4.69 | -0.01 | 0.00 | -0.01 |
| 1978 | 4.65 | 4.65 | -0.01 | 0.00 | -0.01 |
| 1979 | 4.61 | 4.59 | -0.02 | 0.00 | -0.02 |
| 1980 | 4.57 | 4.55 | -0.02 | 0.00 | -0.02 |
| 1981 | 4.41 | 4.41 | -0.01 | 0.00 | -0.01 |
| 1982 | 4.48 | 4.47 | 0.00 | 0.00 | 0.00 |
| 1983 | 4.49 | 4.49 | -0.01 | 0.00 | -0.01 |
| 1984 | 4.54 | 4.54 | -0.01 | 0.00 | -0.01 |
| 1985 | 4.81 | 4.80 | -0.02 | 0.00 | -0.02 |
| 1986 | 5.19 | 5.10 | -0.09 | 0.00 | -0.09 |
| 1987 | 6.42 | 5.94 | -0.48 | -0.39 | -0.09 |
| 1988 | 8.19 | 6.89 | -1.30 | -1.17 | -0.13 |
| 1989 | 6.20 | 5.80 | -0.40 | -0.29 | -0.11 |
| 1990 | 6.00 | 5.61 | -0.39 | -0.31 | -0.08 |
| 1991 | 6.13 | 5.77 | -0.36 | -0.28 | -0.08 |
| 1992 | 6.27 | 5.88 | -0.40 | -0.29 | -0.10 |
| 1993 | 6.58 | 6.10 | -0.48 | -0.37 | -0.12 |
| 1994 | 6.90 | 6.32 | -0.57 | -0.44 | -0.14 |
| 1995 | 6.86 | 6.19 | -0.67 | -0.45 | -0.22 |
| 1996 | 6.84 | 6.16 | -0.68 | -0.40 | -0.28 |
| 1997 | 7.34 | 6.46 | -0.88 | -0.46 | -0.42 |
| 1998 | 7.51 | 6.55 | -0.96 | -0.48 | -0.48 |
| 1999 | 8.47 | 7.28 | -1.19 | -0.60 | -0.59 |
| 2000 | 8.81 | 7.57 | -1.24 | -0.62 | -0.61 |
| 2001 | 7.91 | 7.03 | -0.88 | -0.35 | -0.53 |

| | | | | | |
|------|-------|------|-------|-------|-------|
| 2002 | 8.31 | 7.35 | -0.97 | -0.43 | -0.54 |
| 2003 | 8.55 | 7.32 | -1.23 | -0.48 | -0.74 |
| 2004 | 8.87 | 7.52 | -1.35 | -0.50 | -0.85 |
| 2005 | 9.23 | 7.57 | -1.66 | -0.56 | -1.10 |
| 2006 | 10.18 | 7.91 | -2.27 | -0.72 | -1.55 |
| 2007 | 9.73 | 7.76 | -1.97 | -0.66 | -1.32 |
| 2008 | 8.71 | 7.52 | -1.19 | -0.63 | -0.56 |
| 2009 | 8.98 | 7.82 | -1.16 | -0.59 | -0.57 |
| 2010 | 9.20 | 7.94 | -1.26 | -0.62 | -0.64 |
| 2011 | 8.78 | 7.79 | -0.99 | -0.55 | -0.45 |
| 2012 | 9.10 | 8.06 | -1.04 | -0.56 | -0.48 |

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Table B2: Decomposition of differences between AL and BHW1—Top 0.1 percent income share

| | AL estimate | BHW1 estimate | Difference (BHW1 minus AL) | Difference due to... | |
|------|----------------|------------------|----------------------------------|---|--|
| | | | | (1) Exclusion of dividend imputation credits from BHW1 | (2) Exclusion of taxable realised capital gains from BHW1 |
| 1969 | 1.34 | 1.23 | -0.12 | 0.00 | -0.12 |
| 1970 | 1.19 | 1.19 | 0.00 | 0.00 | 0.00 |
| 1971 | 1.17 | 1.18 | 0.01 | 0.00 | 0.01 |
| 1973 | 1.22 | 1.21 | -0.01 | 0.00 | -0.01 |
| 1973 | 1.11 | 1.10 | -0.02 | 0.00 | -0.02 |
| 1974 | 1.01 | 1.01 | 0.00 | 0.00 | 0.00 |
| 1975 | 1.05 | 1.04 | -0.01 | 0.00 | -0.01 |
| 1976 | 1.00 | 0.99 | 0.00 | 0.00 | 0.00 |
| 1977 | 1.01 | 1.01 | 0.00 | 0.00 | 0.00 |
| 1978 | 0.98 | 0.98 | 0.00 | 0.00 | 0.00 |
| 1979 | 0.97 | 0.96 | -0.01 | 0.00 | -0.01 |
| 1980 | 0.97 | 0.96 | -0.01 | 0.00 | -0.01 |
| 1981 | 0.92 | 0.92 | 0.00 | 0.00 | 0.00 |
| 1982 | 0.96 | 0.95 | 0.00 | 0.00 | 0.00 |
| 1983 | 0.98 | 0.98 | 0.00 | 0.00 | 0.00 |
| 1984 | 0.98 | 0.98 | 0.00 | 0.00 | 0.00 |
| 1985 | 1.10 | 1.09 | -0.01 | 0.00 | -0.01 |
| 1986 | 1.24 | 1.19 | -0.05 | 0.00 | -0.05 |
| 1987 | 1.82 | 1.54 | -0.29 | -0.24 | -0.05 |
| 1988 | 2.91 | 2.07 | -0.84 | -0.80 | -0.05 |
| 1989 | 1.68 | 1.47 | -0.21 | -0.16 | -0.05 |
| 1990 | 1.63 | 1.41 | -0.22 | -0.18 | -0.04 |
| 1991 | 1.66 | 1.46 | -0.20 | -0.16 | -0.04 |
| 1992 | 1.73 | 1.50 | -0.23 | -0.18 | -0.05 |
| 1993 | 1.91 | 1.64 | -0.28 | -0.22 | -0.06 |
| 1994 | 2.09 | 1.77 | -0.32 | -0.26 | -0.06 |
| 1995 | 2.12 | 1.77 | -0.35 | -0.25 | -0.10 |
| 1996 | 1.90 | 1.55 | -0.35 | -0.22 | -0.13 |
| 1997 | 2.11 | 1.66 | -0.44 | -0.24 | -0.20 |
| 1998 | 2.24 | 1.74 | -0.50 | -0.25 | -0.25 |
| 1999 | 2.83 | 2.15 | -0.68 | -0.34 | -0.35 |
| 2000 | 2.99 | 2.28 | -0.71 | -0.32 | -0.40 |
| 2001 | 2.39 | 1.96 | -0.44 | -0.15 | -0.28 |

| | | | | | |
|------|------|------|-------|-------|-------|
| 2002 | 2.53 | 2.08 | -0.45 | -0.19 | -0.27 |
| 2003 | 2.69 | 2.07 | -0.63 | -0.22 | -0.41 |
| 2004 | 2.93 | 2.12 | -0.81 | -0.26 | -0.55 |
| 2005 | 3.09 | 2.14 | -0.95 | -0.27 | -0.69 |
| 2006 | 3.72 | 2.40 | -1.32 | -0.37 | -0.95 |
| 2007 | 3.56 | 2.33 | -1.23 | -0.35 | -0.88 |
| 2008 | 2.96 | 2.26 | -0.70 | -0.33 | -0.37 |
| 2009 | 2.97 | 2.32 | -0.65 | -0.31 | -0.34 |
| 2010 | 3.17 | 2.40 | -0.76 | -0.33 | -0.43 |
| 2011 | 2.84 | 2.24 | -0.60 | -0.30 | -0.31 |
| 2012 | 2.97 | 2.32 | -0.65 | -0.31 | -0.33 |

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Table B3: Decomposition of differences between AL and BHW1—Top 0.5 percent income share

| | AL estimate | BHW1 estimate | Difference (BHW1 minus AL) | Difference due to... | |
|------|-------------|---------------|----------------------------|--|---|
| | | | | (1) Exclusion of dividend imputation credits from BHW1 | (2) Exclusion of taxable realised capital gains from BHW1 |
| 1969 | 3.78 | 3.61 | -0.17 | 0.00 | -0.17 |
| 1970 | 3.52 | 3.52 | 0.00 | 0.00 | 0.00 |
| 1971 | 3.49 | 3.50 | 0.02 | 0.00 | 0.02 |
| 1972 | 3.60 | 3.59 | -0.02 | 0.00 | -0.02 |
| 1973 | 3.37 | 3.35 | -0.02 | 0.00 | -0.02 |
| 1974 | 3.09 | 3.08 | -0.01 | 0.00 | -0.01 |
| 1975 | 3.06 | 3.05 | -0.01 | 0.00 | -0.01 |
| 1976 | 2.97 | 2.96 | -0.01 | 0.00 | -0.01 |
| 1977 | 2.94 | 2.94 | -0.01 | 0.00 | -0.01 |
| 1978 | 2.89 | 2.88 | -0.01 | 0.00 | -0.01 |
| 1979 | 2.84 | 2.82 | -0.02 | 0.00 | -0.02 |
| 1980 | 2.81 | 2.80 | -0.02 | 0.00 | -0.02 |
| 1981 | 2.70 | 2.70 | -0.01 | 0.00 | -0.01 |
| 1982 | 2.75 | 2.75 | 0.00 | 0.00 | 0.00 |
| 1983 | 2.78 | 2.77 | -0.01 | 0.00 | -0.01 |
| 1984 | 2.83 | 2.82 | -0.01 | 0.00 | -0.01 |
| 1985 | 3.06 | 3.04 | -0.01 | 0.00 | -0.01 |
| 1986 | 3.35 | 3.27 | -0.08 | 0.00 | -0.08 |
| 1987 | 4.36 | 3.98 | -0.37 | -0.32 | -0.06 |
| 1988 | 5.88 | 4.72 | -1.16 | -1.07 | -0.10 |
| 1989 | 4.12 | 3.79 | -0.32 | -0.24 | -0.08 |
| 1990 | 3.98 | 3.66 | -0.32 | -0.26 | -0.06 |
| 1991 | 4.06 | 3.76 | -0.30 | -0.24 | -0.06 |
| 1992 | 4.17 | 3.84 | -0.33 | -0.25 | -0.08 |
| 1993 | 4.42 | 3.98 | -0.44 | -0.33 | -0.10 |
| 1994 | 4.67 | 4.12 | -0.55 | -0.42 | -0.13 |
| 1995 | 4.65 | 4.02 | -0.63 | -0.43 | -0.20 |
| 1996 | 4.64 | 4.05 | -0.59 | -0.35 | -0.23 |
| 1997 | 5.02 | 4.30 | -0.72 | -0.39 | -0.34 |
| 1998 | 5.18 | 4.42 | -0.77 | -0.39 | -0.38 |
| 1999 | 6.02 | 5.06 | -0.96 | -0.48 | -0.48 |
| 2000 | 6.28 | 5.26 | -1.02 | -0.49 | -0.53 |
| 2001 | 5.47 | 4.80 | -0.68 | -0.26 | -0.42 |

| | | | | | |
|------|------|------|-------|-------|-------|
| 2002 | 5.78 | 5.03 | -0.75 | -0.33 | -0.42 |
| 2003 | 6.01 | 4.99 | -1.02 | -0.39 | -0.63 |
| 2004 | 6.35 | 5.11 | -1.24 | -0.45 | -0.79 |
| 2005 | 6.60 | 5.22 | -1.39 | -0.45 | -0.93 |
| 2006 | 7.51 | 5.57 | -1.94 | -0.59 | -1.35 |
| 2007 | 7.18 | 5.43 | -1.75 | -0.56 | -1.19 |
| 2008 | 6.24 | 5.24 | -1.00 | -0.52 | -0.49 |
| 2009 | 6.41 | 5.44 | -0.97 | -0.49 | -0.48 |
| 2010 | 6.63 | 5.53 | -1.10 | -0.52 | -0.58 |
| 2011 | 6.22 | 5.34 | -0.89 | -0.48 | -0.41 |
| 2012 | 6.44 | 5.51 | -0.94 | -0.50 | -0.44 |

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Table B4: Decomposition of differences between AL and BHW1—Top 5 percent income share

| | AL estimate | BHW1 estimate | Difference (BHW1 minus AL) | Difference due to... | |
|------|----------------|------------------|----------------------------------|---|--|
| | | | | (1) Exclusion of dividend imputation credits from BHW1 | (2) Exclusion of taxable realised capital gains from BHW1 |
| 1969 | 16.64 | 16.43 | -0.21 | 0.00 | -0.21 |
| 1970 | 16.29 | 16.29 | 0.00 | 0.00 | 0.00 |
| 1971 | 16.55 | 16.57 | 0.02 | 0.00 | 0.02 |
| 1972 | 16.54 | 16.51 | -0.02 | 0.00 | -0.02 |
| 1973 | 15.93 | 15.89 | -0.04 | 0.00 | -0.04 |
| 1974 | 15.12 | 15.10 | -0.01 | 0.00 | -0.01 |
| 1975 | 14.91 | 14.89 | -0.02 | 0.00 | -0.02 |
| 1976 | 14.64 | 14.62 | -0.02 | 0.00 | -0.02 |
| 1977 | 14.56 | 14.55 | -0.01 | 0.00 | -0.01 |
| 1978 | 14.47 | 14.46 | -0.01 | 0.00 | -0.01 |
| 1979 | 14.52 | 14.49 | -0.04 | 0.00 | -0.04 |
| 1980 | 14.62 | 14.59 | -0.03 | 0.00 | -0.03 |
| 1981 | 14.49 | 14.48 | -0.01 | 0.00 | -0.01 |
| 1982 | 14.81 | 14.80 | -0.01 | 0.00 | -0.01 |
| 1983 | 14.55 | 14.54 | -0.01 | 0.00 | -0.01 |
| 1984 | 14.58 | 14.57 | -0.01 | 0.00 | -0.01 |
| 1985 | 14.99 | 14.97 | -0.02 | 0.00 | -0.02 |
| 1986 | 15.57 | 15.45 | -0.13 | 0.00 | -0.13 |
| 1987 | 17.27 | 16.67 | -0.61 | -0.48 | -0.13 |
| 1988 | 19.32 | 17.71 | -1.62 | -1.39 | -0.23 |
| 1989 | 16.92 | 16.36 | -0.56 | -0.39 | -0.17 |
| 1990 | 16.60 | 16.08 | -0.52 | -0.40 | -0.12 |
| 1991 | 17.09 | 16.59 | -0.50 | -0.36 | -0.14 |
| 1992 | 17.33 | 16.77 | -0.56 | -0.39 | -0.17 |
| 1993 | 17.76 | 17.03 | -0.72 | -0.51 | -0.22 |
| 1994 | 18.19 | 17.30 | -0.89 | -0.63 | -0.27 |
| 1995 | 18.08 | 17.07 | -1.02 | -0.66 | -0.36 |
| 1996 | 17.96 | 16.92 | -1.04 | -0.59 | -0.45 |
| 1997 | 18.75 | 17.49 | -1.26 | -0.64 | -0.62 |
| 1998 | 18.87 | 17.56 | -1.31 | -0.64 | -0.67 |
| 1999 | 20.03 | 18.52 | -1.51 | -0.76 | -0.75 |
| 2000 | 20.48 | 18.87 | -1.61 | -0.83 | -0.77 |
| 2001 | 19.27 | 18.05 | -1.22 | -0.50 | -0.72 |

| | | | | | |
|------|-------|-------|-------|-------|-------|
| 2002 | 19.85 | 18.49 | -1.36 | -0.59 | -0.77 |
| 2003 | 19.95 | 18.19 | -1.77 | -0.66 | -1.11 |
| 2004 | 20.28 | 18.29 | -1.99 | -0.74 | -1.25 |
| 2005 | 20.98 | 18.64 | -2.35 | -0.81 | -1.54 |
| 2006 | 22.27 | 19.00 | -3.27 | -1.01 | -2.27 |
| 2007 | 21.43 | 18.65 | -2.78 | -0.94 | -1.84 |
| 2008 | 20.10 | 18.43 | -1.67 | -0.89 | -0.79 |
| 2009 | 20.94 | 19.24 | -1.70 | -0.85 | -0.85 |
| 2010 | 21.24 | 19.43 | -1.81 | -0.91 | -0.90 |
| 2011 | 20.92 | 19.44 | -1.48 | -0.85 | -0.63 |
| 2012 | 21.71 | 20.18 | -1.53 | -0.87 | -0.66 |

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Table B5: Decomposition of differences between AL and BHW1—Top 10 percent income share

| | AL estimate | BHW1 estimate | Difference (BHW1 minus AL) | Difference due to... | |
|------|-------------|---------------|----------------------------|--|---|
| | | | | (1) Exclusion of dividend imputation credits from BHW1 | (2) Exclusion of taxable realised capital gains from BHW1 |
| 1969 | 26.32 | 26.10 | -0.22 | 0.00 | -0.22 |
| 1970 | 26.04 | 26.04 | 0.00 | 0.00 | 0.00 |
| 1971 | 26.57 | 26.59 | 0.02 | 0.00 | 0.02 |
| 1972 | 26.27 | 26.24 | -0.02 | 0.00 | -0.02 |
| 1973 | 25.46 | 25.42 | -0.04 | 0.00 | -0.04 |
| 1974 | 24.64 | 24.62 | -0.01 | 0.00 | -0.01 |
| 1975 | 24.33 | 24.31 | -0.02 | 0.00 | -0.02 |
| 1976 | 24.03 | 24.01 | -0.02 | 0.00 | -0.02 |
| 1977 | 24.02 | 24.00 | -0.01 | 0.00 | -0.01 |
| 1978 | 23.90 | 23.88 | -0.01 | 0.00 | -0.01 |
| 1979 | 24.05 | 24.01 | -0.04 | 0.00 | -0.04 |
| 1980 | 24.24 | 24.21 | -0.04 | 0.00 | -0.04 |
| 1981 | 24.20 | 24.19 | -0.01 | 0.00 | -0.01 |
| 1982 | 24.77 | 24.76 | -0.01 | 0.00 | -0.01 |
| 1983 | 24.30 | 24.29 | -0.01 | 0.00 | -0.01 |
| 1984 | 24.38 | 24.37 | -0.01 | 0.00 | -0.01 |
| 1985 | 24.87 | 24.85 | -0.02 | 0.00 | -0.02 |
| 1986 | 25.62 | 25.48 | -0.14 | 0.00 | -0.14 |
| 1987 | 27.59 | 26.92 | -0.67 | -0.52 | -0.15 |
| 1988 | 29.49 | 27.80 | -1.69 | -1.44 | -0.26 |
| 1989 | 26.82 | 26.18 | -0.64 | -0.43 | -0.21 |
| 1990 | 26.49 | 25.90 | -0.59 | -0.45 | -0.15 |
| 1991 | 27.32 | 26.74 | -0.57 | -0.40 | -0.17 |
| 1992 | 27.55 | 26.91 | -0.64 | -0.43 | -0.21 |
| 1993 | 27.99 | 27.18 | -0.81 | -0.56 | -0.26 |
| 1994 | 28.43 | 27.45 | -0.99 | -0.68 | -0.30 |
| 1995 | 28.10 | 27.01 | -1.09 | -0.70 | -0.39 |
| 1996 | 27.87 | 26.71 | -1.16 | -0.65 | -0.51 |
| 1997 | 28.84 | 27.40 | -1.44 | -0.71 | -0.73 |
| 1998 | 28.94 | 27.41 | -1.53 | -0.73 | -0.81 |
| 1999 | 30.19 | 28.45 | -1.74 | -0.86 | -0.88 |
| 2000 | 30.59 | 28.78 | -1.81 | -0.94 | -0.87 |
| 2001 | 29.10 | 27.69 | -1.41 | -0.58 | -0.83 |

| | | | | | |
|------|-------|-------|-------|-------|-------|
| 2002 | 29.80 | 28.22 | -1.59 | -0.69 | -0.90 |
| 2003 | 29.76 | 27.69 | -2.07 | -0.77 | -1.30 |
| 2004 | 30.08 | 27.75 | -2.32 | -0.87 | -1.46 |
| 2005 | 30.90 | 28.22 | -2.68 | -0.92 | -1.75 |
| 2006 | 32.32 | 28.54 | -3.78 | -1.17 | -2.60 |
| 2007 | 31.19 | 28.04 | -3.14 | -1.08 | -2.06 |
| 2008 | 29.65 | 27.75 | -1.90 | -1.01 | -0.89 |
| 2009 | 30.82 | 28.91 | -1.91 | -0.95 | -0.95 |
| 2010 | 31.09 | 29.10 | -1.99 | -1.01 | -0.98 |
| 2011 | 30.83 | 29.18 | -1.65 | -0.95 | -0.71 |
| 2012 | 32.05 | 30.30 | -1.75 | -0.99 | -0.76 |

Table B6: Decomposition of differences between BHW1 and BHW2 —Top 1 percent income share

| | BHW1 estimate | BHW2 estimate | Difference (BHW2 minus BHW1) | Difference due to... | | |
|------|------------------|------------------|------------------------------------|-----------------------|----------------------|-----------|
| | | | | (1) 'Re- ordering' | (2) Control total | (3) Other |
| 2000 | 7.57 | 8.79 | 1.21 | 0.07 | 0.66 | 0.49 |
| 2001 | 7.03 | 8.34 | 1.31 | 0.05 | 0.62 | 0.64 |
| 2002 | 7.35 | 8.55 | 1.21 | 0.11 | 0.66 | 0.43 |
| 2003 | 7.32 | 8.49 | 1.17 | 0.11 | 0.65 | 0.40 |
| 2004 | 7.52 | 8.63 | 1.11 | 0.02 | 0.66 | 0.43 |
| 2005 | 7.57 | 8.93 | 1.35 | 0.12 | 0.71 | 0.52 |
| 2006 | 7.91 | 9.47 | 1.57 | 0.04 | 0.76 | 0.77 |
| 2007 | 7.76 | 9.29 | 1.53 | -0.10 | 0.74 | 0.89 |
| 2008 | 7.52 | 8.87 | 1.35 | 0.07 | 0.68 | 0.60 |
| 2009 | 7.82 | 9.10 | 1.28 | 0.11 | 0.72 | 0.46 |
| 2010 | 7.94 | 9.13 | 1.19 | 0.08 | 0.71 | 0.40 |
| 2011 | 7.79 | 8.84 | 1.06 | 0.05 | 0.69 | 0.32 |
| 2012 | 8.06 | 9.03 | 0.98 | 0.05 | 0.71 | 0.22 |

Table B7: Decomposition of differences between BHW1 and BHW2—Top 0.1 percent income share

| | BHW1 estimate | BHW2 estimate | Difference (BHW2 minus BHW1) | Difference due to... | | |
|------|------------------|------------------|------------------------------------|-----------------------|----------------------|-----------|
| | | | | (1) 'Re- ordering' | (2) Control total | (3) Other |
| 2000 | 2.28 | 2.66 | 0.39 | 0.02 | 0.20 | 0.17 |
| 2001 | 1.96 | 2.35 | 0.39 | 0.00 | 0.17 | 0.22 |
| 2002 | 2.08 | 2.43 | 0.35 | 0.02 | 0.19 | 0.14 |
| 2003 | 2.07 | 2.46 | 0.40 | 0.05 | 0.19 | 0.16 |
| 2004 | 2.12 | 2.58 | 0.46 | 0.08 | 0.20 | 0.18 |
| 2005 | 2.14 | 2.69 | 0.55 | 0.13 | 0.21 | 0.20 |
| 2006 | 2.40 | 3.08 | 0.69 | 0.10 | 0.25 | 0.34 |
| 2007 | 2.33 | 3.06 | 0.73 | -0.02 | 0.24 | 0.51 |
| 2008 | 2.26 | 2.83 | 0.57 | 0.06 | 0.22 | 0.29 |
| 2009 | 2.32 | 2.81 | 0.49 | 0.07 | 0.22 | 0.20 |
| 2010 | 2.40 | 2.84 | 0.44 | 0.07 | 0.22 | 0.15 |
| 2011 | 2.24 | 2.61 | 0.38 | 0.07 | 0.20 | 0.10 |
| 2012 | 2.32 | 2.66 | 0.35 | 0.07 | 0.21 | 0.07 |

Table B8: Decomposition of differences between BHW1 and BHW2—Top 0.5 percent income share

| | BHW1 estimate | BHW2 estimate | Difference (BHW2 minus BHW1) | Difference due to... | | |
|------|------------------|------------------|------------------------------------|-----------------------|----------------------|-----------|
| | | | | (1) 'Re- ordering' | (2) Control total | (3) Other |
| 2000 | 5.26 | 6.09 | 0.83 | 0.00 | 0.46 | 0.37 |
| 2001 | 4.80 | 5.69 | 0.89 | -0.01 | 0.42 | 0.48 |
| 2002 | 5.03 | 5.86 | 0.83 | 0.05 | 0.45 | 0.33 |
| 2003 | 4.99 | 5.85 | 0.86 | 0.09 | 0.45 | 0.32 |
| 2004 | 5.11 | 6.00 | 0.89 | 0.11 | 0.46 | 0.32 |
| 2005 | 5.22 | 6.21 | 0.99 | 0.09 | 0.49 | 0.41 |
| 2006 | 5.57 | 6.73 | 1.15 | 0.05 | 0.54 | 0.56 |
| 2007 | 5.43 | 6.62 | 1.18 | -0.04 | 0.53 | 0.70 |
| 2008 | 5.24 | 6.23 | 0.99 | 0.06 | 0.48 | 0.46 |
| 2009 | 5.44 | 6.37 | 0.93 | 0.09 | 0.50 | 0.34 |
| 2010 | 5.53 | 6.40 | 0.87 | 0.09 | 0.50 | 0.28 |
| 2011 | 5.34 | 6.11 | 0.77 | 0.09 | 0.48 | 0.21 |
| 2012 | 5.51 | 6.22 | 0.72 | 0.09 | 0.49 | 0.14 |

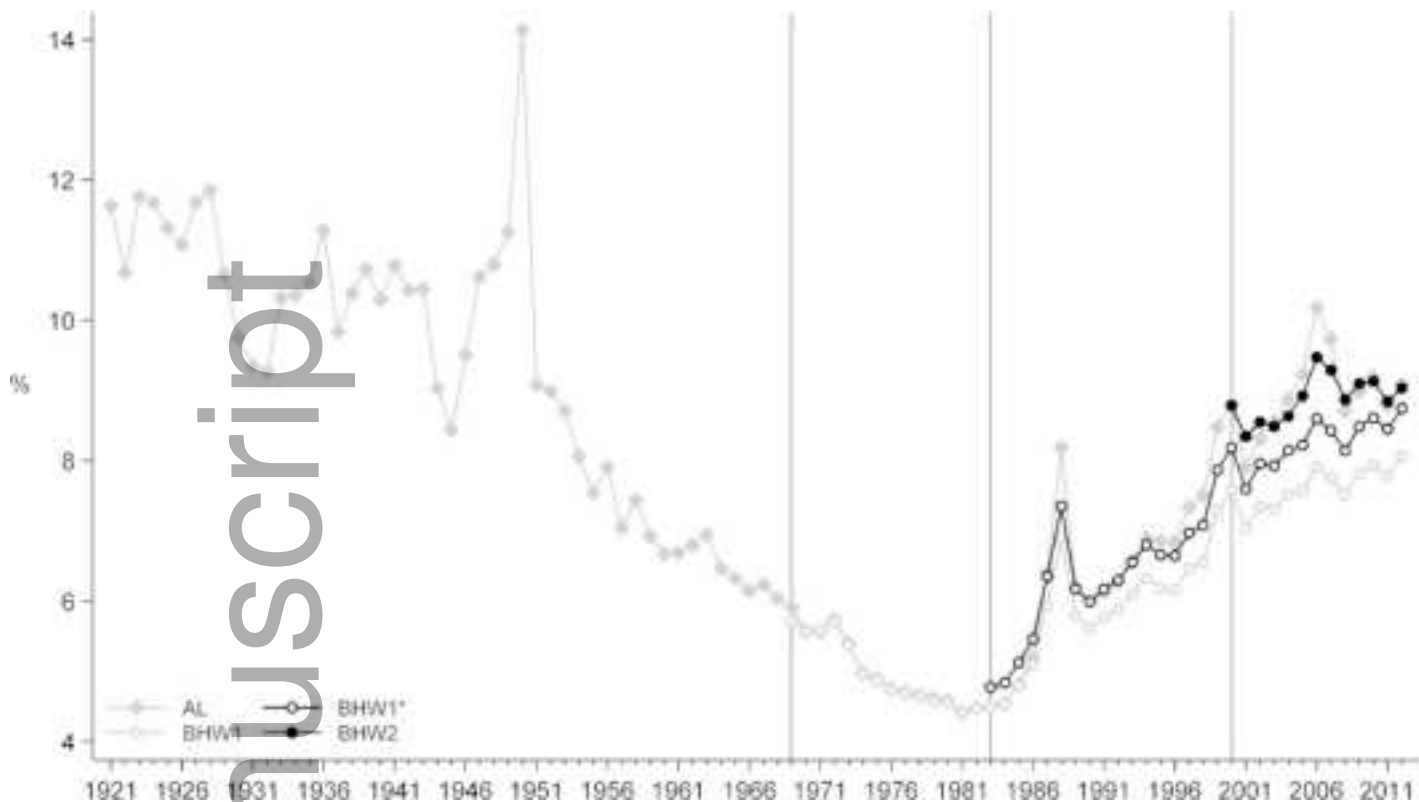
Table B9: Decomposition of differences between BHW1 and BHW2—Top 5 percent income share

| | BHW1 estimate | BHW2 estimate | Difference (BHW2 minus BHW1) | Difference due to... | | |
|------|------------------|------------------|------------------------------------|-----------------------|----------------------|-----------|
| | | | | (1) 'Re- ordering' | (2) Control total | (3) Other |
| 2000 | 18.87 | 21.50 | 2.63 | 0.04 | 1.61 | 0.98 |
| 2001 | 18.05 | 20.90 | 2.86 | 0.00 | 1.55 | 1.31 |
| 2002 | 18.49 | 21.20 | 2.71 | 0.07 | 1.64 | 1.00 |
| 2003 | 18.19 | 20.82 | 2.63 | 0.10 | 1.60 | 0.93 |
| 2004 | 18.29 | 20.90 | 2.60 | 0.10 | 1.60 | 0.90 |
| 2005 | 18.64 | 21.54 | 2.91 | 0.10 | 1.71 | 1.10 |
| 2006 | 19.00 | 22.22 | 3.21 | 0.00 | 1.78 | 1.43 |
| 2007 | 18.65 | 21.74 | 3.09 | -0.11 | 1.73 | 1.47 |
| 2008 | 18.43 | 21.30 | 2.87 | 0.01 | 1.64 | 1.22 |
| 2009 | 19.24 | 22.00 | 2.76 | 0.11 | 1.73 | 0.92 |
| 2010 | 19.43 | 22.04 | 2.60 | 0.10 | 1.72 | 0.78 |
| 2011 | 19.44 | 21.86 | 2.42 | 0.09 | 1.71 | 0.63 |
| 2012 | 20.18 | 22.47 | 2.28 | 0.08 | 1.76 | 0.44 |

Table B10: Decomposition of differences between BHW1 and BHW2—Top 10 percent income share

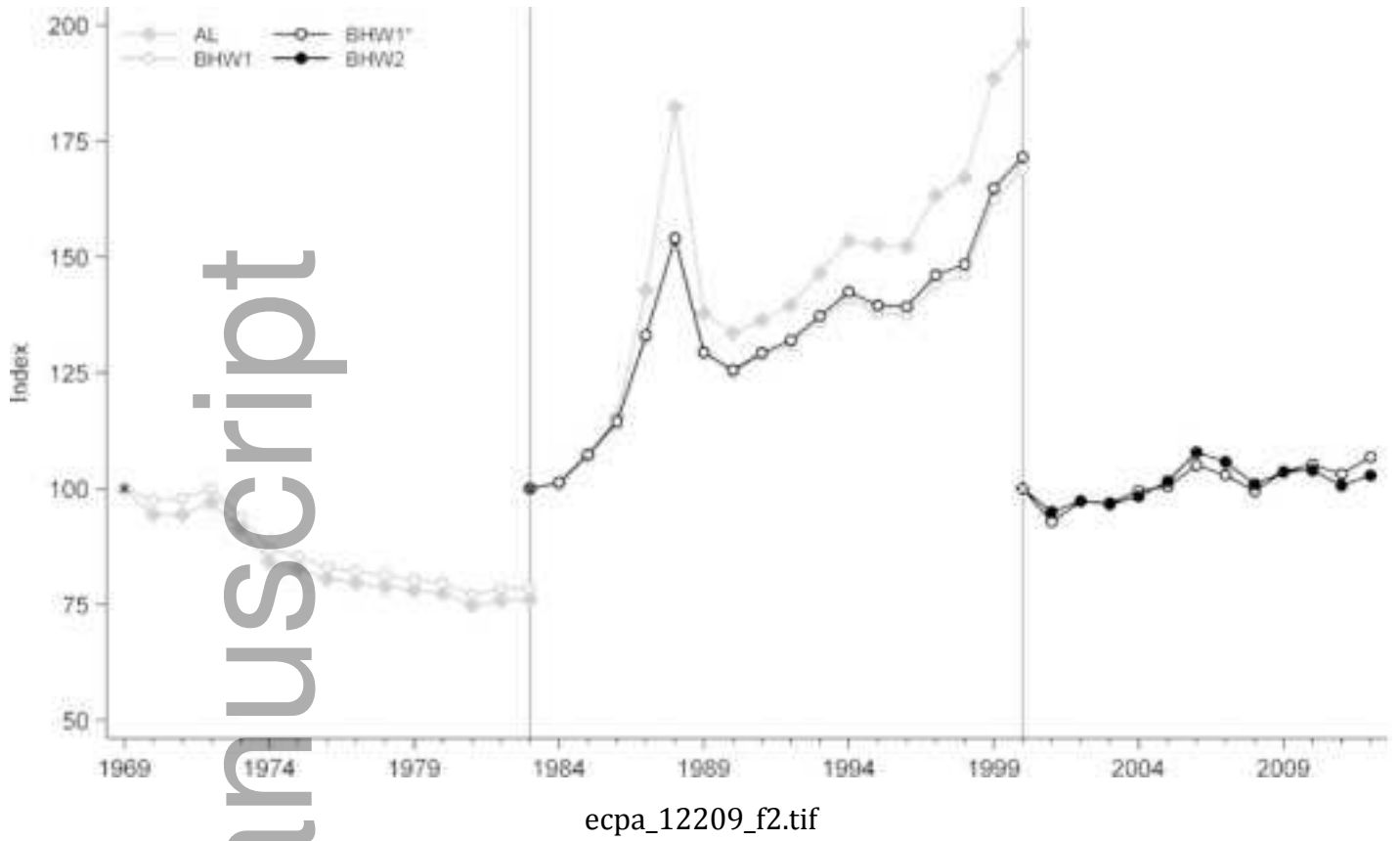
| | BHW1 estimate | BHW2 estimate | Difference (BHW2 minus BHW1) | Difference due to... | | |
|------|------------------|------------------|------------------------------------|-----------------------|----------------------|-----------|
| | | | | (1) 'Re- ordering' | (2) Control total | (3) Other |
| 2000 | 28.78 | 32.54 | 3.76 | 0.04 | 2.44 | 1.28 |
| 2001 | 27.69 | 31.72 | 4.04 | -0.02 | 2.35 | 1.71 |
| 2002 | 28.22 | 32.12 | 3.90 | 0.07 | 2.48 | 1.35 |
| 2003 | 27.69 | 31.46 | 3.78 | 0.13 | 2.42 | 1.23 |
| 2004 | 27.75 | 31.45 | 3.70 | 0.14 | 2.41 | 1.14 |
| 2005 | 28.22 | 32.32 | 4.10 | 0.07 | 2.57 | 1.47 |
| 2006 | 28.54 | 32.98 | 4.44 | 0.03 | 2.65 | 1.76 |
| 2007 | 28.04 | 32.24 | 4.19 | -0.13 | 2.56 | 1.77 |
| 2008 | 27.75 | 31.77 | 4.02 | 0.00 | 2.44 | 1.58 |
| 2009 | 28.91 | 32.88 | 3.97 | 0.06 | 2.59 | 1.31 |
| 2010 | 29.10 | 32.87 | 3.76 | 0.05 | 2.56 | 1.15 |
| 2011 | 29.18 | 32.76 | 3.58 | 0.04 | 2.56 | 0.98 |
| 2012 | 30.30 | 33.69 | 3.39 | 0.09 | 2.64 | 0.66 |

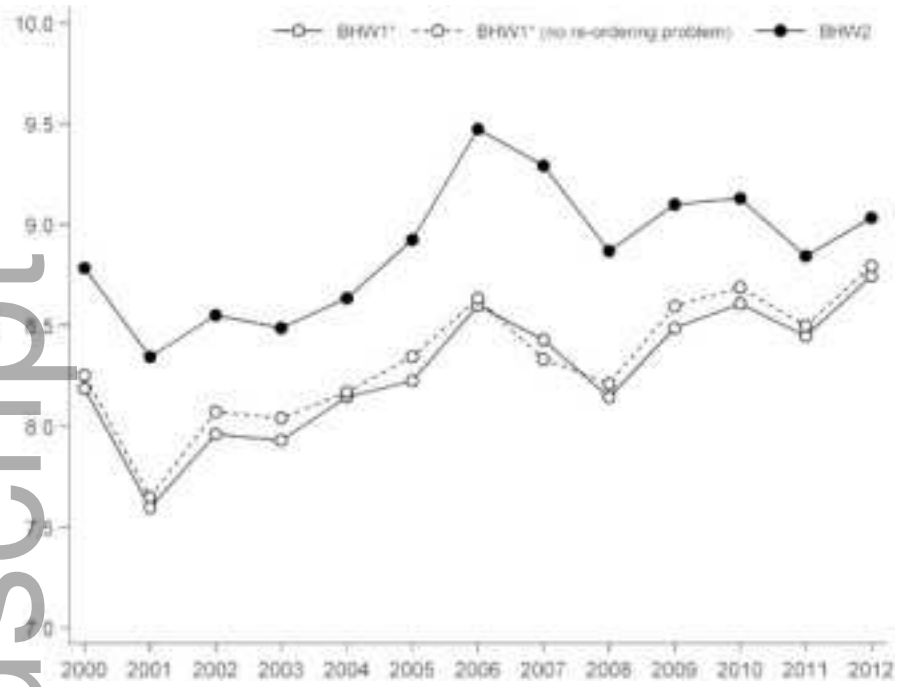
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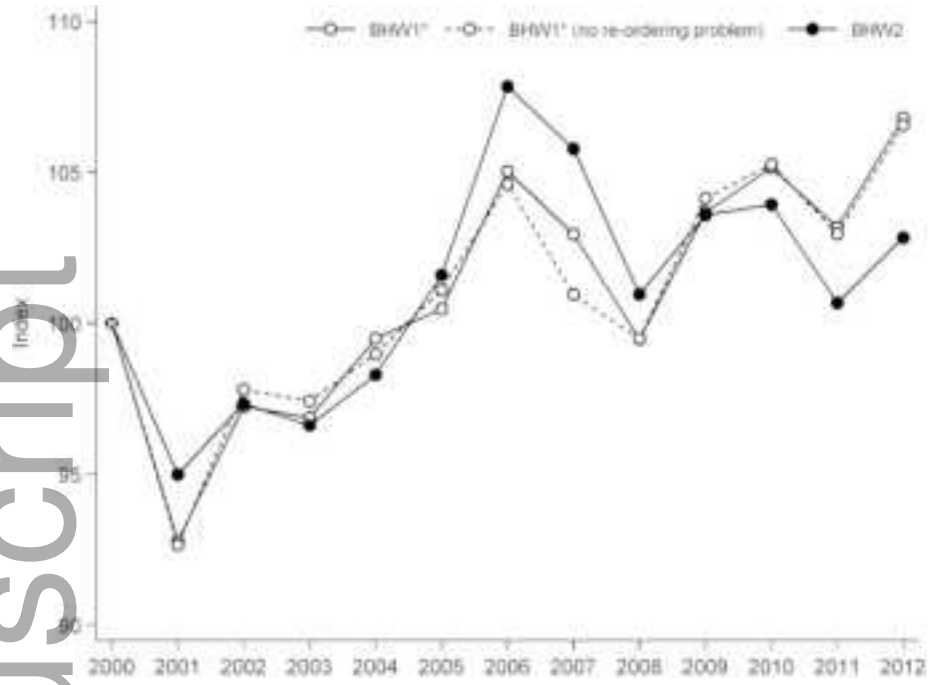
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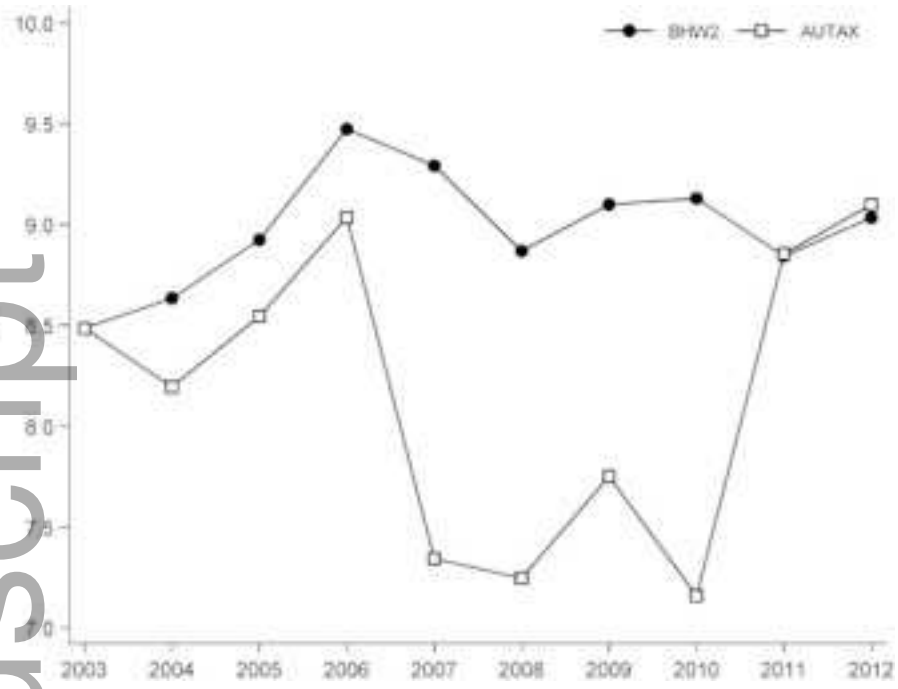




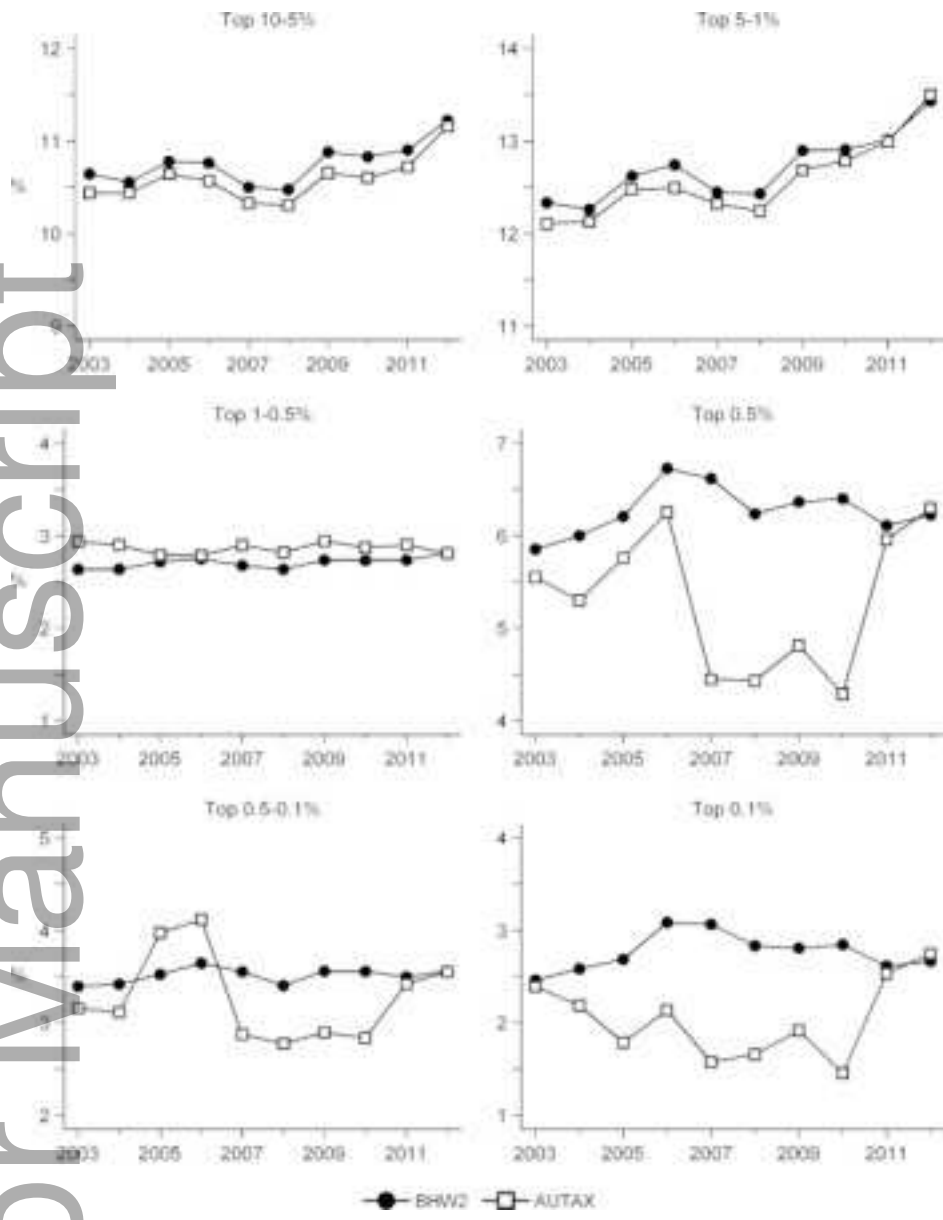
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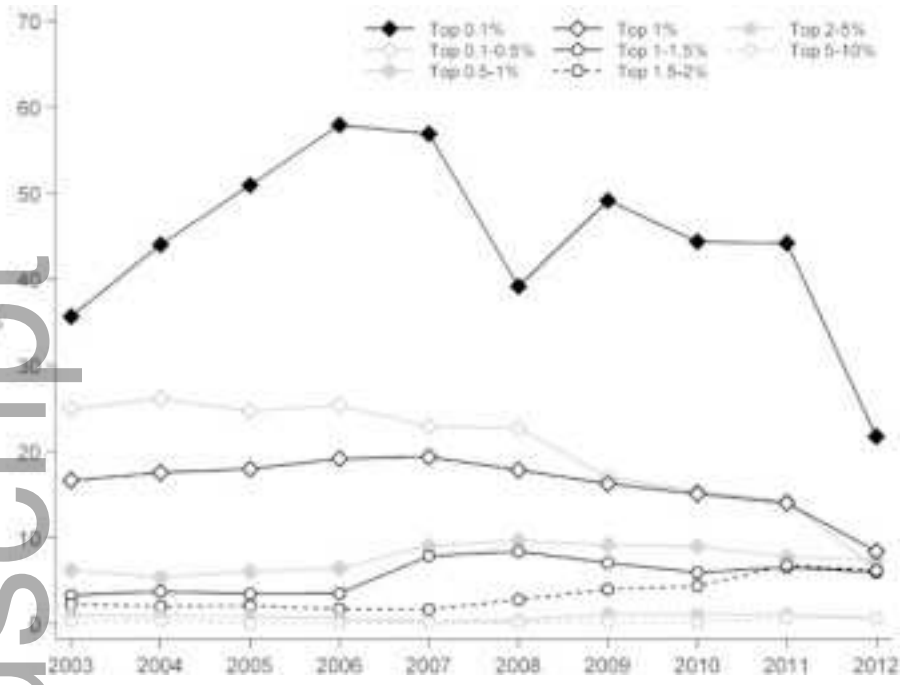
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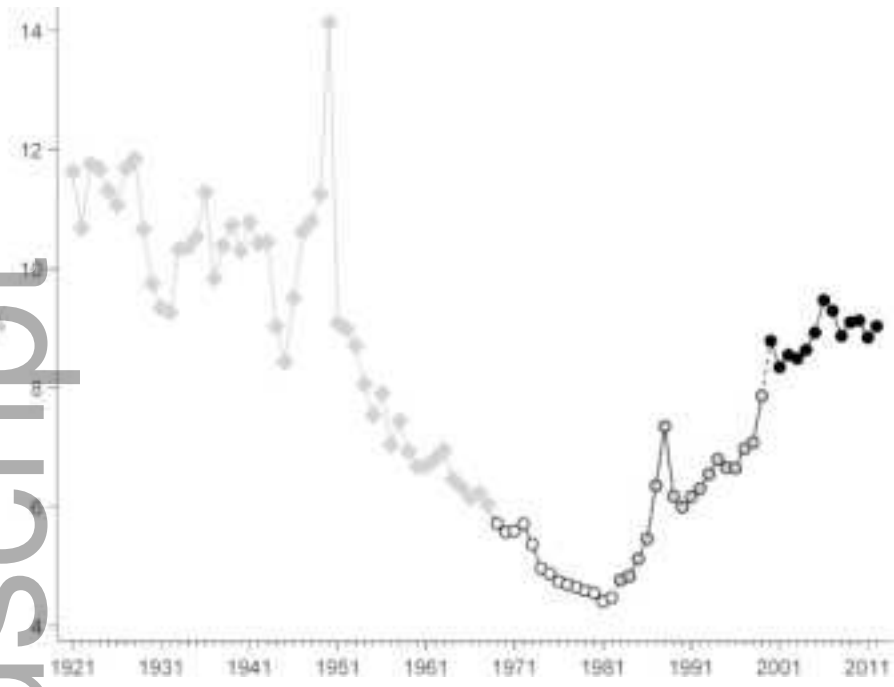
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ecpa_12209_f6.tif



ecpa_12209_f7.tif



ecpa_12209_f8.tif