What's so bad about more inequality?

Lars Osberg

McCulloch Professor of Economics

Dalhousie University, Halifax, Canada

Email: Lars.Osberg@dal.ca

Version: March 5, 2014

Revision of Keynote Address to ACADEMY OF THE SOCIAL SCIENCES IN AUSTRALIA – 2013 ANNUAL SYMPOSIUM *Levelling the Spirit: Addressing the Social Impacts of Economic Inequality***,** Canberra, Australia November 12, 2013. The comments of Bruce Bradbury, Peter Burton, Mel Cross, Talan Iscan, Brian MacLean, Shelley Phipps, Peter Saunders (UNSW), Sy Spilerman, Ed Wolff and Armine Yalnyzian and participants at the Center for Wealth and Inequality Workshop, Columbia University, October 3, 2013 are much appreciated. Errors remaining are my own.

Comments very much appreciated!

Abstract

"More Inequality" can mean either more inequality in comparisons of different societies at a particular point in time or more inequality over time within a given society. Cross-sectional comparisons argue that countries with higher long-run levels of inequality of income are more unhealthy, less democratic, more crime-infested, less happy, less mobile and less equal in economic opportunity – but controversy surrounds some estimates. More importantly, cross-sectional comparisons of the implications of different levels of economic inequality implicitly presume that these represent steady state outcomes.

The paper compares long-run levels of real income growth at the very top, and for the bottom 90% and bottom 99% in the U.S., Canada and Australia to illustrate the uniqueness of the post-WWII period of balanced growth (and consequent stability of the income distribution). The new normal of the U.S., Canada and Australia is unbalanced growth – specifically, over the last thirty years the incomes of the top 1% have grown significantly more rapidly than those of everyone else. The paper examines whether there is a plausible auto-equilibrating market mechanism that will equalize income growth rates and stabilize inequality. Unbalanced income growth necessarily implies changes in consumption and savings flows which accumulate to changed stocks of indebtedness, financial fragility and periodic macro-economic crises. Greater economic and sociopolitical instability is therefore a key implication of more inequality over time.

What's so bad about more inequality?

Lars Osberg

What do we mean by "more inequality" and why should we worry about it?

This paper begins by noting that we typically think of "more" economic inequality in the sense either that "Australia is more unequal than Sweden" – cross-sectional comparisons of different societies at a particular point in time – or in the sense that "Australia is more unequal now than it was in 1980" – comparing inequality over time within a given society. Fundamentally different issues are raised in each case. "Inequality" is also a complex concept, since in any society there are many differences among people in their control over economic resources, which can be summarized by a number of different statistical measures, which do not always agree.

The literature on economic inequality and its implications has therefore become voluminous, complex and contentious. Section 1 of this essay starts by discussing the arguments that countries with higher levels of inequality of income are less healthy, less democratic and less happy and have more crime, more conflict and less intergenerational social mobility and equality of economic opportunity. However, such cross-sectional comparisons of the implications of different levels of economic inequality are primarily useful if we think those differences are stable and if we are interested in answering questions like: "what type of society would one like to live in?" Implicitly, cross-sectional comparisons between countries presume that observed levels of inequality represent steady state outcomes, i.e. situations that could potentially persist into the indefinite future.

Section 2 of this paper argues that in the U.S., Canada and Australia this is not really our current problem. It notes that a given level of inequality can only remain constant if income growth is balanced (i.e. equal rates of growth at all percentiles of the income distribution). It compares long-run levels of real income growth over time at the very top end, and for the bottom 90% and bottom 99% in the U.S., Canada and Australia to illustrate how unique the post-war period of balanced growth (and consequent stability of the income distribution) actually was. In these three countries, the rapidly rising share of the very top end of the distribution of market income in recent decades reflects a new normal – unbalanced growth.

When the real incomes of the top 1% grow strongly and those of everyone else lag behind, "more inequality" means increasing inequality over time within each country. Although there is no natural upper bound to the real incomes of the top 1%, can ever-increasing inequality possibly be a steady state? "More inequality" in the sense of increasing inequality over time raises the questions: "what sort of society are we becoming? Will inequality stop increasing? What processes could equalize income growth rates across income classes and thereby stabilize the distribution of income – and how likely are they to occur?"

Section 3 suggests that there is little reason to expect an equalization of market income growth rates – i.e. balanced growth – any time soon. But Section 4 argues that the unbalanced growth of incomes cannot be a long run steady state. Unequal income growth rates imply changes in savings flows which accumulate to changed stocks of indebtedness, financial fragility and periodic macro-economic crises. Ever increasing income gaps also imply increasing gaps in political spending and child human capital and ever increasing incentives to advertise the luxury consumption goods that fuel envy. Greater macro-economic, political and social instability is therefore a key implication of more inequality over time. Section 5 concludes that if markets cannot be expected to auto-equilibrate, the political economy of increasing inequality will be crucial – but the outcomes of those processes are very unclear.

1. Cross-sectional Comparisons of Inequality and its Implications

This paper understands economic inequality as "differences among people in their command over economic resources[1]". However, because every society has many different types of economic resources, used by many different people at different points in time, the measurement of inequality depends crucially on being specific about what is being distributed among whom, when. Like most of the literature, this paper will focus on inequality in the distribution of annual income[2], but to decide *which* income concept is most appropriate to discuss, we should first ask ourselves why we want to know.

In a market society, income flows perform dual functions. "Market income" is, for example, simultaneously the payments of firms and the receipts of individuals. Firms pay individuals to motivate the supply of labour and capital to the production process and individuals typically pool their receipts within households to enable personal utility from consumption. If we want to think about how changes in the size, structure and organization of firms and markets are changing inequality, we will therefore prefer (as in Section 2 of this essay) to start with the inequality among individuals in their receipt of factor payments (i.e. individual market income before tax).

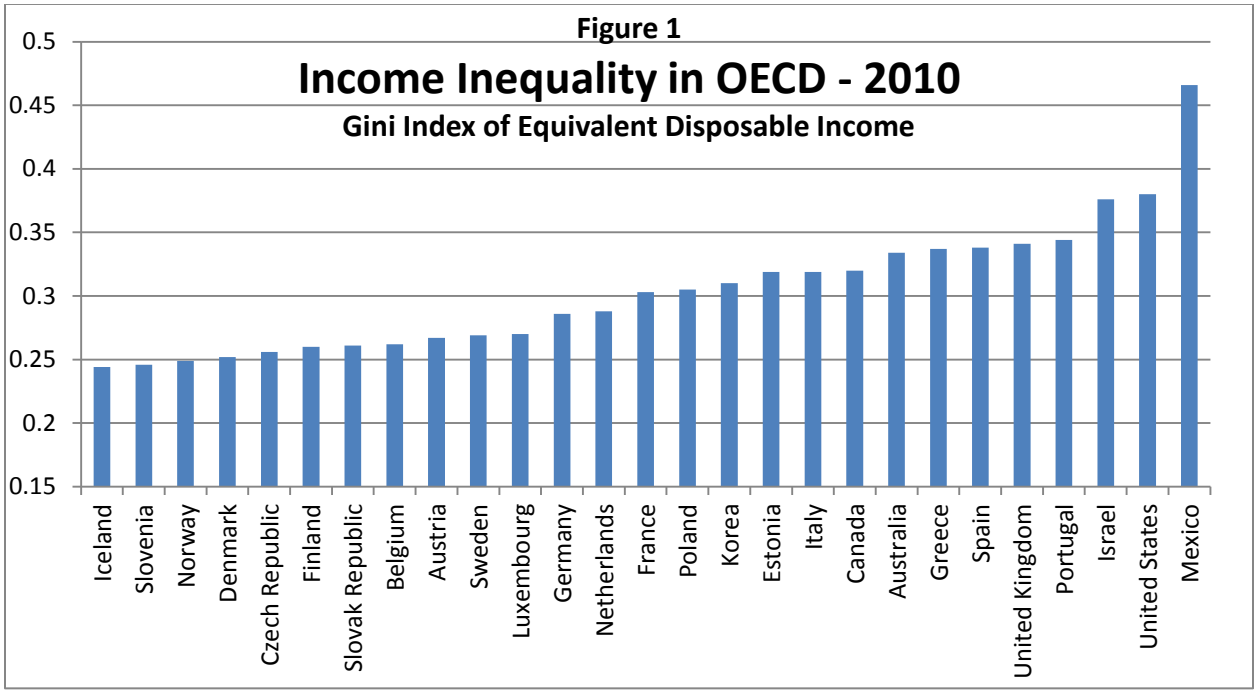
However, much of the literature[3] is motivated by concern about inequality in the distribution of well-being from consumption, because equity in well-being is important in a social justice sense. If "Inequality" is to be understood in consumption terms, the fact that most people live in households and share consumption with other family members implies that the appropriate annual income concept to focus on is the total disposable (i.e. after taxes and transfers) money income of households – sometimes

[1] Osberg (1981:1)

[2] See Davies (2009) and Davies et al (2008) for discussion of the distribution of wealth. Since income is a flow, it is crucial to specify the period of measurement. Although lifetime income may be the desirable concept to measure for some purposes, actual lifetime incomes can only be observed with unacceptably long delays. Simulated lifetime incomes (as in Bowlus and Robin, forthcoming) are only as plausible as the assumptions underlying the simulation methodology. Hence, the most common compromise is to discuss annual incomes.

[3] E.g. Divided We Stand OECD

referred to as "post-fisc" income[4]. Because both the tax and transfer incidence of government reflect politically generated responses to the level and inequality of pre-tax market incomes, inequality of income as thus defined depends on both political and economic influences. For consumption purposes it does not much matter whether an additional dollar comes from market income, tax cuts or transfer payments – the bottom line is still post-fisc income. However, if well-being from consumption is to be measured accurately, some allowance should be made for the economies of scale in consumption which are available in larger households. In affluent countries, it has therefore become common practice to adjust household income for family size and to report the distribution of equivalent disposable income among all individuals[5].



Source: data extracted on 06 Aug 2013 16:04 UTC (GMT) from OECD.Stat
http://stats.oecd.org/Index.aspx?DataSetCode=IDD

[4] See United Nations Economic Commission for Europe (2011) *Canberra Group Handbook on Household Income Statistics*

[5] Note that inequality in household incomes can change without changes in economic processes. An increased correlation of spousal earnings (e.g. "power couples" at the top and jobless families at the bottom) could widen the disparity of household earnings, even without any trend to greater inequality in individual factor incomes (see Hou and Myles, 2007). However, the aggregate impact on income shares is small (see Lu, Morissette and Schirle: 2011), especially compared to the changes in top end income share to be discussed in section 2. Burtless (2009) concluded that in affluent countries demographically induced changes in inequality are small – hence this paper will neglect them henceforth.

To set the context, Figure 1 uses OECD data from 2010 to summarize the differences among affluent countries in the level of the Gini index[6] of inequality of equivalent, "post-fisc" income. An important fact is immediately apparent – there is no unique level of income inequality in advanced market economies. Although all these countries compete in global marketplaces and are increasingly interconnected in trade and harmonized in market regulation, a broad range in the level of within-country inequality is observed. Evidently, a variety of levels of inequality are consistent with the institutional framework of market capitalism and effective participation in the modern global economy. Since the plain fact of diversity indicates that different countries must have made different choices, Figure 1 suggests the question – what are the crucial social choices which determine the level of a nation's inequality? Since it is hard to imagine that the level of income inequality could be unconnected to other aspects of society[7], a second set of questions then becomes: what exactly are the implications of social choices about more inequality?

Over the last thirty years, the volume and sophistication of cross-country comparisons of economic inequality has exploded, and an ever-expanding group of scholars have used cross-country data to try to address these issues. Richard Wilkinson and Kate Pickett's excellent book *The Spirit Level: Why Equality is Better for Everyone* has become particularly famous as a powerful prosecution of the case against inequality[8]. In this book, cross-national differences in income inequality are compared to cross-national differences in a host of social indicators – average levels of health, trust, social mobility, infant mortality, educational performance, violence, obesity, mental illness, teen births, homicides and imprisonment. Cross-state comparisons within the U.S. are also used to replicate the cross-national estimates. The brief summary of their findings is that along all these dimensions, in places where there is more inequality there are also more social problems.

Is more inequality guilty of causing all this?

Can more inequality be <u>proved</u> to be guilty of causing all this? What level of certainty should we demand?

Guilt and adequate evidence of guilt are distinctly different issues – and which side of the argument should bear the burden of proof?[9] In arguing that there is a causal relationship between the

[6] It has long been recognized (e.g. Osberg, 1981) that within the class of axiomatically-defensible inequality indices the Gini index is more mid-range sensitive than the Theil (low-end sensitive) or coefficient of variation (high-end sensitive).

[7] Comparing the U.S. and Europe in 1831, Alexis de Tocqueville famously remarked on "the prodigious influence that this primary fact (a general equality of conditions) exercises on the whole course of society; it gives a peculiar direction to public opinion and a peculiar tenor to the laws; it imparts new maxims to the governing authorities and peculiar habits to the governed; it creates opinions, gives birth to new sentiments, founds novel customs and modifies whatever it does not produce" (1956:3)

[8] Wilkinson and Pickett's many articles (e.g.2006) have also had a major impact on the scholarly debate.

[9] Requiring proof that inequality causes, for example, ill-health (e.g. by requiring the coefficient representing the influence of inequality to be statistically significant at 95%) puts the burden of proof on showing an adverse health

level of inequality and these social ills, operating at the micro level as the greater social stresses of more unequal societies impact on individuals, Wilkinson and Pickett make a verbally plausible case. However, distinguishing causation from correlation has, in recent years, become a preoccupation of econometric methodology. The technical requirements for rigorous proof of causality are very demanding, and in this context standard techniques are just not available[10].

When the unit of observation is countries, sample size is also inherently limited – especially since many countries either do not have comparable data or are at levels of development where the impacts of inequality are arguably very different. Hence, many of the Wilkinson/Pickett correlations and scatter plots depend on data from only 25 affluent countries, which exposes their work to the critique that this or that "outlier" may be dominating their results.[11] As well, "inequality" is a complex concept, with a number of plausible measures[12], and there are a large number of plausible alternative theories and many relevant variables that might also influence each dependent variable. It is hard to imagine that every possible combination of measures and methodologies would produce an unambiguously similar result. As Leigh, Jencks and Smeeding (2009: 399) put it, in discussing the relationship between inequality and health: "a fundamental problem is the fact that this is a field with too many theories for the number of available data points".

However, larger micro-data sets have been used in some studies. Using, for example, the 53 thousand respondents spread over the 37 years of the General Social Survey in the U.S., Oishi, Kesebir and Diener (2011) found that Americans were, on average, happier in years with less inequality – but that the effect was concentrated on low-income respondents and mediated by perceived unfairness and lack of trust[13]. Since many studies have documented the fact that, when asked, the vast majority of respondents[14], in all countries, express a preference for less inequality, it is not surprising that more inequality in the country in which one lives in is associated with less individual happiness.

---

impact. In most other health issues (e.g. product safety tests) the burden of proof is on proving safety – i.e. proving that an adverse influence on health does not exist.

[10] Can one imagine valid instrumental variables for income inequality or planned experimental designs implementing randomized shocks to the inequality of otherwise similar societies?

[11] Including/excluding specific (differing) "outliers" is the major theme of Saunder's critique (2010). Leigh, for example, claims that placing one's thumb over an apparently influential data point can make an apparent relationship disappear (2013:100). Wilkinson and Pickett address the issue in a postscript (page 284). Sampling variability is an argument for excluding outliers in survey data but this context uses all data points. And it is never obvious that excluding extreme observations – which have more information content – is optimal.

[12] See Osberg (2010) for a more complete argument.

[13] Ball and Chernova (2008) use the World Values Survey and conclude that relative income matters much more than absolute income for individual happiness, although both do matter. Stevenson and Wolfers (2008, 2013) disagree. In any event, other determinants, such as unemployment or relationships, are much bigger than either.

[14] E.g. to to the International Social Survey Program or the World Values Survey – see Osberg and Smeeding (2006) for detailed discussion.

As well, it is not surprising that there is more social conflict when there is more inequality to fight over – as Milanovic (2013) has found. But he argues that in very poor countries, there are many people who have an equally low level of income (at physical subsistence), and so he uses a Gini index of income adjusted to reflect the "maximum feasible level" of the Gini index. Hence, his study can also be seen as a case study in the complexities of the concept of inequality itself – complexities which help guarantee that the regression wars will continue for years to come, without all-convincing resolution.

However, there is least uncertainty about the causal connection between more inequality of outcome and more inequality of opportunity. As Brunori, Ferreira and Peragine (2013:17) recently concluded, using cross-country regressions: "Countries with a higher degree of income inequality are also characterized by greater inequality of opportunity…. less unequal countries are also those that have a higher degree of intergenerational mobility." Corak (2004, 2013) and many others have made the same point and the idea that economic inequality accumulates and deepens over generations is hardly new. In a market economy in which parents can control their personal expenditures on the human capital of their own children, it is inevitable that the inequality of income of adults will influence the inequality of opportunity of children.

As Alfred Marshall (1913:562) remarked: "the professional classes especially, while generally eager to save some capital *for* their children are even more on the alert for opportunities of investing it *in* them" while the children of the working classes "go to their graves with undeveloped abilities and faculties". Marshall insisted especially that "this evil is cumulative". As formalized by Becker and Tomes (1979), in the standard parental altruism model of intergenerational bequest, the unequal distribution of income of each cohort of parents is partly due to their own unequal inheritances from the previous generation, and those unequal incomes enable their unequal bequests to the next generation. Parents of generation 0 care about both their own life time consumption (C_0) and the utility (U_1) of their generation 1 children[15]. The parents therefore maximize $U_0 = u_0(C_0, U_1)$. Their children's utility similarly depends on own consumption and the well-being of the next generation (i.e. $U_1 = u_1(C_1, U_2)$). In each generation i, lifetime income (Y_i) is spent on own lifetime consumption (C_i), on human capital bequest (HK_i) and on financial bequest (K_i) to the next generation – i.e. the budget constraint is $Y_i = C_i + HK_i + K_i$. Lifetime income is the sum of earnings from own raw labour (W_i) plus the return to the human capital bequest of the previous generation (HK_{i-1}) which gets a (diminishing) rate of return (r_{hi}) plus the return on the financial capital bequest (K_{i-1}) of the previous generation at the market rate (r_k) – i.e. lifetime income $Y_i = W_i + r_{hi} HK_{i-1} + r_k K_{i-1}$.

By assuming that the rate of return on human capital in any generation (r_{hi}) is a random variable, the Becker and Tomes approach implies reversion to the mean within each family line and, over the long run future of each dynastic family line, this implies equal expectations of income (if undiscounted). How much consolation this should be to any individual child in a poor family in any given generation is never explained – the idea that "equality of opportunity" is about equality of life-chances within each

[15] Of course, parental investment in child human capital may also be a direct source of parental utility – as in the "trophy child" phenomenon.

generation is strangely missing. In general, in a multi-generational market-based society, the inequality of outcome of one generation always conditions the inequality of opportunity of the next generation.

In the human capital model, more inequality in parental incomes has an "income effect" because more parental income enables more disparity in the "enrichment expenditures" (see Corak 2013:91) which increase the skills of advantaged children. More inequality also has a "price effect" in that the widening of the differential between "success" and "failure" of the children implies there are more incentives for parents to invest private resources in their children's human capital.

However, the human capital model of intergenerational mobility omits any recognition of the scarcity and rationing of top positions. Positional externalities are assumed to be zero. In this model, all decisions are made by the household (e.g. Harvard admits everyone whose parents are willing to pay the tuition) and there is nothing competitive about life. In the human capital model, an improvement in the life chances of one family's children has zero impact on any other family's children. But if elite schools and universities deny admission to some applicants and if only one person in any given company can be CEO, then an improved probability of success for others necessarily implies a poorer chance of success for oneself.

In modelling the 'rat-race' for scarce top positions, labour economists[16] have long recognized that scarcity of top slots implies an aggregate over-investment, as no individual recognizes the externalities to others (in diminishing their probability of promotion) of one's own increased striving to win promotion. As the gap between payoffs to positions widens, the incentives driving such over-investment by individuals also increase[17].

However, the darker side of more inequality of income comes from the fact that another way to win is if others lose. Larger prizes in a competitive race increase the benefits to affluent parents of reducing the chances of the competitors of their children. More inequality means an increase in the potential costs, to affluent parents, of downward intergenerational economic mobility for their children. For affluent families, the greater is the gap between their own incomes and those of most other people, the further there is for the children of affluence to fall in the next generation – hence it becomes ever more important for rich parents to give their own children every possible advantage. More inequality of incomes thus implies that public expenditure on the human capital of all children to equalize opportunity has greater potential costs for upper income families.

Wanting to see one's own child win, in a fair race, is a normal (if conflicted) parental aspiration. The rhetoric of fair equality of opportunity therefore enjoys near universal approval among the economic elite (partly because it legitimizes their own current positions). However, actually fulfilling the

[16] See Devaro (2006) and references therein.

[17] One of the costs, therefore, of more income inequality is a greater "loss of childhood." A higher level of inequality raises the stakes in childhood educational achievement and as parents increasingly pressurize children, the children lose in leisure time, in the additional stress associated with school success (or failure) and in the increased costs of dysfunctional rebellion against greater pressures.

reality of equal opportunity is quite another thing. When the drop from the top is not so severe, and the conflict between rhetoric and reality is not so large, one can find the same parents simultaneously supporting some compensatory public expenditure for the disadvantaged to offset the inequality of private expenditures on childhood human capital and investing heavily in their own child's advantages. But the political economy of inequality of opportunity predicts that this becomes rarer when the costs to affluent families of upward mobility in social rank of the disadvantaged increase (because it necessarily implies an increased likelihood of a corresponding downward reshuffling in rank of their own children).

The widespread availability[18] of data such as Figure 1 presents has been very socially important in establishing that choices can be made about the level of income inequality. It is clear that both the policies needed to change inequality and the ultimate level of inequality reached would have other social impacts. However, cross-country regressions to establish the size of those impacts on health, happiness and other aspects of well-being have to assume that the level of inequality in each country is stable – something that can only be true if incomes at all parts of the income distribution are growing at an equal rate. If that were true, one could use cross-country evidence to help answer questions like: "what sort of society would I like to live in?" – but Australians, Canadians and Americans have been living, since the 1980s, in countries where income growth rates are not equal. So a logically prior type of question is whether increasing inequality will stabilize, and what are the implications if it does not.

2. More Inequality over time.

For many years, the U.S. has had considerably more income inequality than the OECD average, while Australia and Canada have been somewhat closer to, but still above, the mean level of income inequality in advanced market economies. As Figure 2 indicates, in these three countries the Gini index of inequality in equivalent annual net income among all people has, albeit with pauses corresponding to declines in the national unemployment rate, also been trending up in recent years[19]. This section will argue that since the percentage shares of income received by each part of the income distribution remain constant when everyone's income grows at the same rate, income inequality can only grow over time when the growth rates of income at different points in the income distribution diverge. Periods of increasing inequality are therefore necessarily periods of unbalanced growth.

[18] Reliable international comparisons of the level of income inequality first became available in the 1970s – see Atkinson (1970) or Sawyer (1976). Before that there was really no firm evidence that significant differences in the level of inequality were possible.

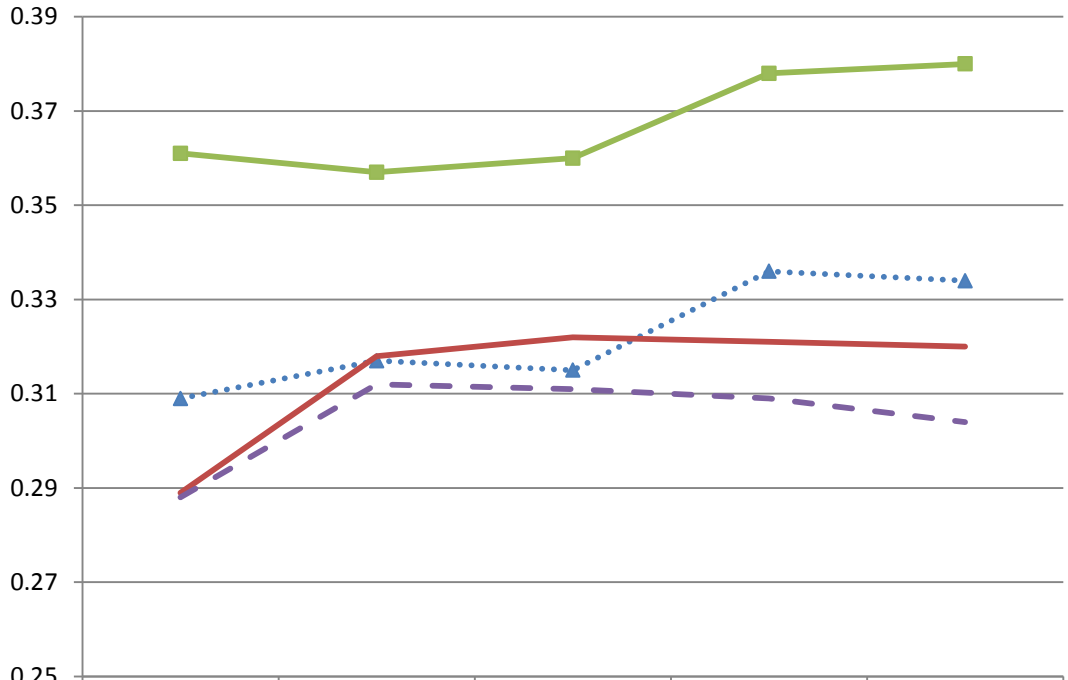
[19] In Canada, Figure 2 shows how the change in Gini index (of equivalent household disposable income) since 2000 has been much smaller than in the 1990s – which masks trends to greater polarization. As Figure 3 shows, the top 1% share (of pre-tax individual income) continued to increase. Over the same period, the relative advantages of the middle class declined (the ratio of the average income of the second, third and fourth quintiles to that of the first quintile fell – see CANSIM Table 202-0701). Lessened inequality among the bottom 80% offset the impact of rising top 1% incomes on the Gini index. As well, annual estimates of the Gini come from survey data, in which top end incomes are top-coded.

Figure 2 shows that the Gini index of inequality has increased in the U.S., Canada and Australia but it does not indicate *which parts* of the income distribution have changed. In the U.S. and Canada, most of the income distribution has seen little change in real incomes over the last thirty years.[20]

As Alvaredo et al (2013:13) put it, for "Anglo" countries: "most of the action has been at the very top". Gordon (2009) and Burkhauser *et al.* (2009) also found that essentially all of the increase of inequality after 1993 in the U.S. occurred in the top 1 percent group, and that among the bottom 99 percent of the population the increase of inequality was nil. Murphy et al (2007, 2008), Yalnizyan (2010) and Osberg (2008) had earlier come to a similar conclusion in Canada. Osberg (2013) and Veall (2012) reinforce that finding, which is driven by three decades of essentially flat real household money income for the lower percentiles of the income distribution, in both Canada and the U.S.. This section will therefore concentrate on the inequality in income shares, and income growth rates, between the top 1% of the income distribution and the remaining 99%.

[20] See Osberg (2013), especially Figures 2,3 and 6 – note that the constant real incomes of the lower quintiles is consistent with (and has been accompanied by) considerable 'churning' of relative position for different groups – see Lu, Morissette and Schirle (2011).

Figure 2
Australia, Canada, USA & OECD
Gini Index of Post-Tax & Transfer Equivalent Household Income



	1995	2000	2004	2008	2010
Australia	0.309	0.317	0.315	0.336	0.334
Canada	0.289	0.318	0.322	0.321	0.32
United States	0.361	0.357	0.36	0.378	0.38
ALL OECD	0.288	0.312	0.311	0.309	0.304

Source:
http://stats.oecd.org/OECDStat_Metadata/ShowMetadata.ashx?Dataset=IDD&ShowOnWeb=true&Lang=en Data extracted on 06 Aug 2013 17:18 UTC (GMT) from OECD.Stat

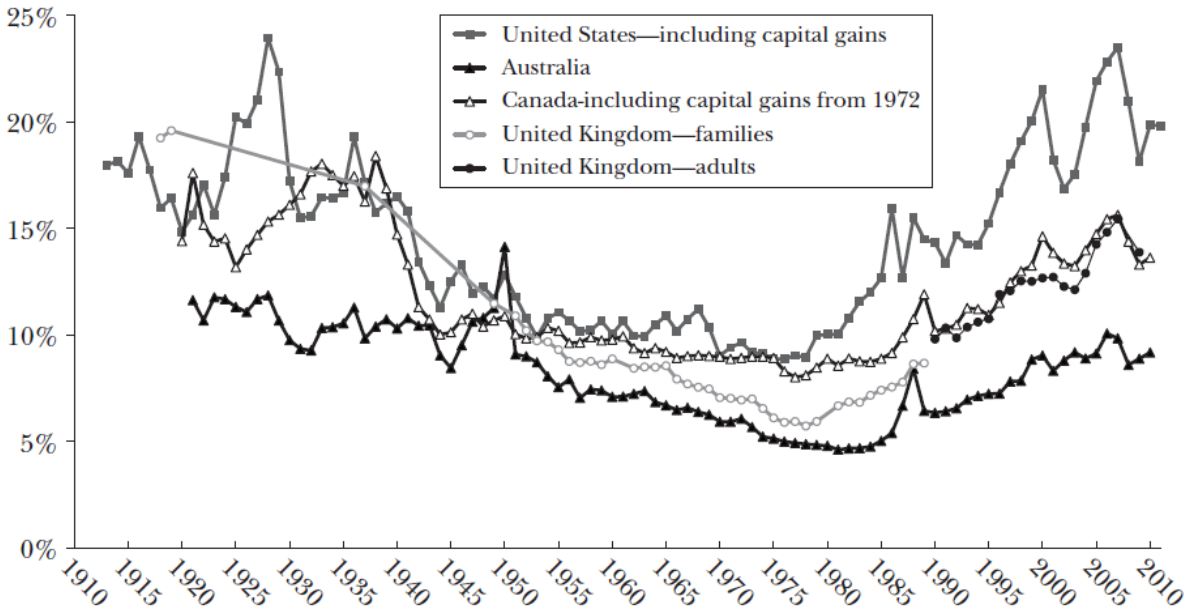
As Figure 3 (copied from Alvaredo, Atkinson, Piketty Saez (2013)) shows, in Australia the evolution of top end income *shares* has been similar. However, unlike Canada and the U.S., where the median real wage and the average incomes of the bottom 90% have stagnated, middle class incomes in Australia have also risen appreciably. Greenville et al (2013) argue that since 1988 the longest resource boom in Australian economic history has produced significant increases in employment, hours of work and the hourly real wage for the middle quintiles of the income distribution. Relying on survey data from the HES, they note that "rising inequality in Australia is also driven by the 99 per cent, not just the 1 per cent. (2013:9)".

Figure 3

Figure 2

The Evolution of the Shares of the Top 1 Percent in Different Countries

A: Top 1 Percent Income Shares in English-speaking Countries (U-Shape)



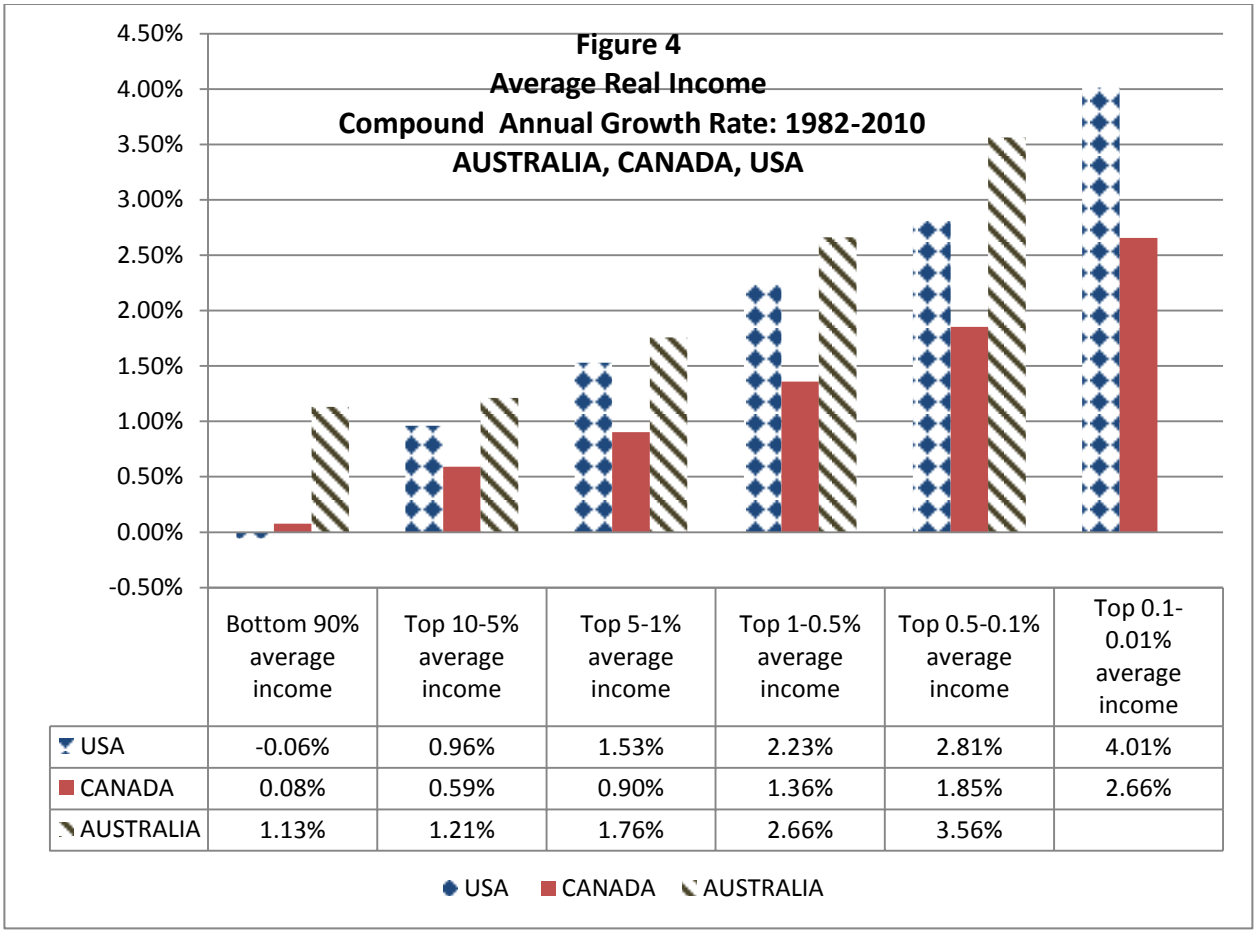
Nevertheless, in all three countries the farther up the income pyramid one goes, the faster the rate of increase of incomes. Figure 4 uses income tax data (from the World Top Incomes Data Base) [21] to compare the long term compound annual growth rate of real taxable income for different segments of the income distribution in Australia, Canada and the U.S.. Australia does stand out for the positive (+1.13%) growth rate of average real taxable annual income among the bottom 90% of tax units. However, Australia shares the U.S. and Canadian pattern of unequal growth and an accelerating rate of increase in real incomes at the top. Since the gulf between income groups will continue to widen as long as incomes at the top end continue to grow faster than the incomes of everyone else, all three countries face the problem of unbalanced growth – income inequality will continue to increase until either bottom end incomes grow much faster or top end incomes grow much slower.

[21] In Figures 3, 4, 5 and 7, top end incomes in Canada appear to be somewhat lower than in the U.S. However, Veall (2012) cautions that in Canada, the retained earnings of Canadian-Controlled Private Corporations (CCPCs) are not attributed back to individual income tax filers, while in U.S. data, net revenues of comparable private personal corporations flow through directly and immediately to the personal tax return of the owner or owners. Hence, the apparent Canada/US difference in top income shares and levels is at least partially due to the greater ability of wealthy Canadians to shelter income from income tax, through the use of CCPCs.

This paper focusses on the changing fortunes of the top 1% of the income distribution for two main reasons. First is the simple fact that the absolute size of changes in the income share of the top 1% dwarfs the magnitude of shifts historically observed elsewhere in the income distribution. (Between 1951 and 1981, for example, the income share of the middle 20% of Canada's income distribution fluctuated by 0.6% - more than an order of magnitude smaller than the income share gain of the top 1% over the next 30 years.) But even more important is the fact that there is no obvious reason to expect growth rates of real income to converge any time soon – so Australia, Canada and the U.S. all face the question: "How and when will the income distribution stabilize? Where is rising inequality taking us?"

Figure 3 presented the income share of the top 1% in different "Anglo" countries. However, the income share of the top 1% is really a ratio – i.e. the ratio of the total income of the top 1% to the total income of all persons (the bottom 99% plus the top 1%). Since ratios can change over time either because of changes in the numerator or because of changes in the denominator (or both), is it changes in income growth at the top or changes in income growth at the bottom which have been driving changes in income share? Figure 4[22] reminds us that although Australia, Canada and the U.S. have all experienced a similar substantial increase in the income share of the top 1% in recent years, the underlying income dynamics have differed in an important sense. In Australia, the bottom 90% have experienced rising absolute real incomes, while Canada and the U.S. have seen stagnant average real incomes for the bottom 90%. The differential in income growth rates across income groups is similar (as it has to be, if the rise in income share is to be similar). However, the bottom 90% of Australians did get some increase in average real income: 1.13% growth per year compounds, over 28 years, to a 32% real increase, which is much preferable to the cumulative real gains of the bottom 90% of Canadian (2.1%) and American taxpayers (-1.5%).

[22] In Figure 3 and Figures 5 to 7, the short-term impact of the "Great Recession" of 2008-2010 on top-end incomes is clearly apparent. Although one Canadian journalist has jumped on this decline to declare an end to rising inequality (Coyne, 2013 – but exhaustively debunked by Corak, 2012), Saez (2013) documents the rapid recovery of top incomes in the U.S. after 2010. Unfortunately, data for 2011 and later years are not yet available for either Canada or Australia. However, the essential message of Figure 4 – the large long term difference between income groups in average real income growth rates over the last few decades – is robust to alternative possible time intervals (see Osberg (2013:Figure 6) for 1987-2007 and Osberg (2014: Figure 4) for 1984-2010). The differential is larger if pre-recession income growth is considered, so in that sense Figure 4 understates the size of growth rate gaps.



	Bottom 90% average income	Top 10-5% average income	Top 5-1% average income	Top 1-0.5% average income	Top 0.5-0.1% average income	Top 0.1-0.01% average income
USA	-0.06%	0.96%	1.53%	2.23%	2.81%	4.01%
CANADA	0.08%	0.59%	0.90%	1.36%	1.85%	2.66%
AUSTRALIA	1.13%	1.21%	1.76%	2.66%	3.56%	

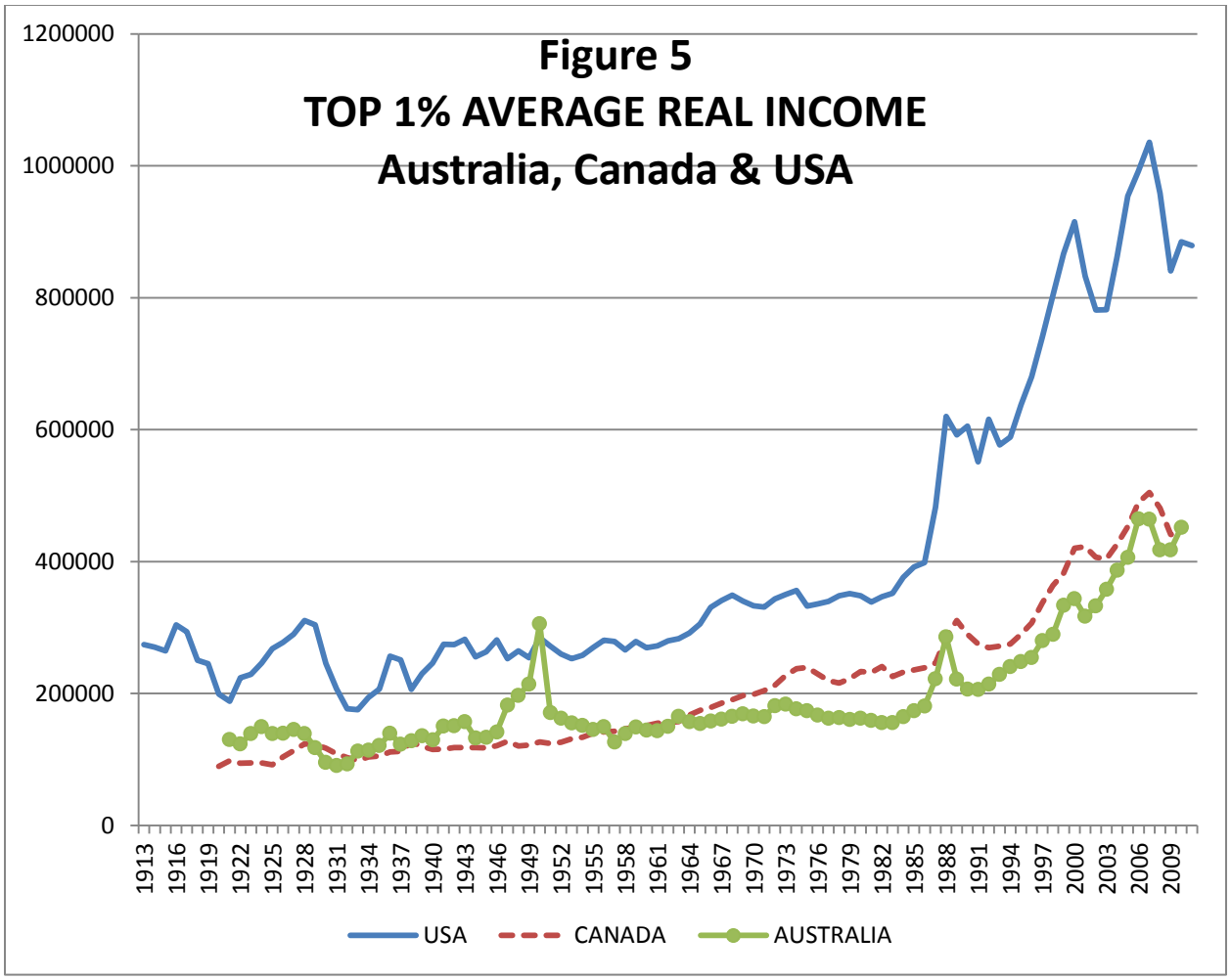
Source: The World Top Incomes Database

http://topincomes.g-mond.parisschoolofeconomics.eu/

Date 22-08-2013

Time 11:31:48

Because Figure 3 portrays the decline and rise of the income *share* of the top 1%, it can perhaps leave the impression that the income share of the top 1% in Australia, the U.S. and Canada may now just be returning to its 1920s levels – which might be seen as a sort of stabilization. However, looking at it this way ignores the fact that the fall in income *share* of the top 1% from the late 1930s to the mid 1970s was not due to declines in their own real incomes. Rather, their decline in income *share* was driven by the more rapid growth of real incomes of the other 99% of the income distribution. Figure 5 illustrates the heights to which the absolute incomes of the top 1% have grown over the past thirty years – an upward trend to which there is no obvious upper bound. As Figure 4 illustrated, the differences in income growth rates are larger, the further up the income distribution one cares to look, but the key point is that increasing top end *shares* of total income since the early 1980s have been driven by inequality in relative growth rates of income.



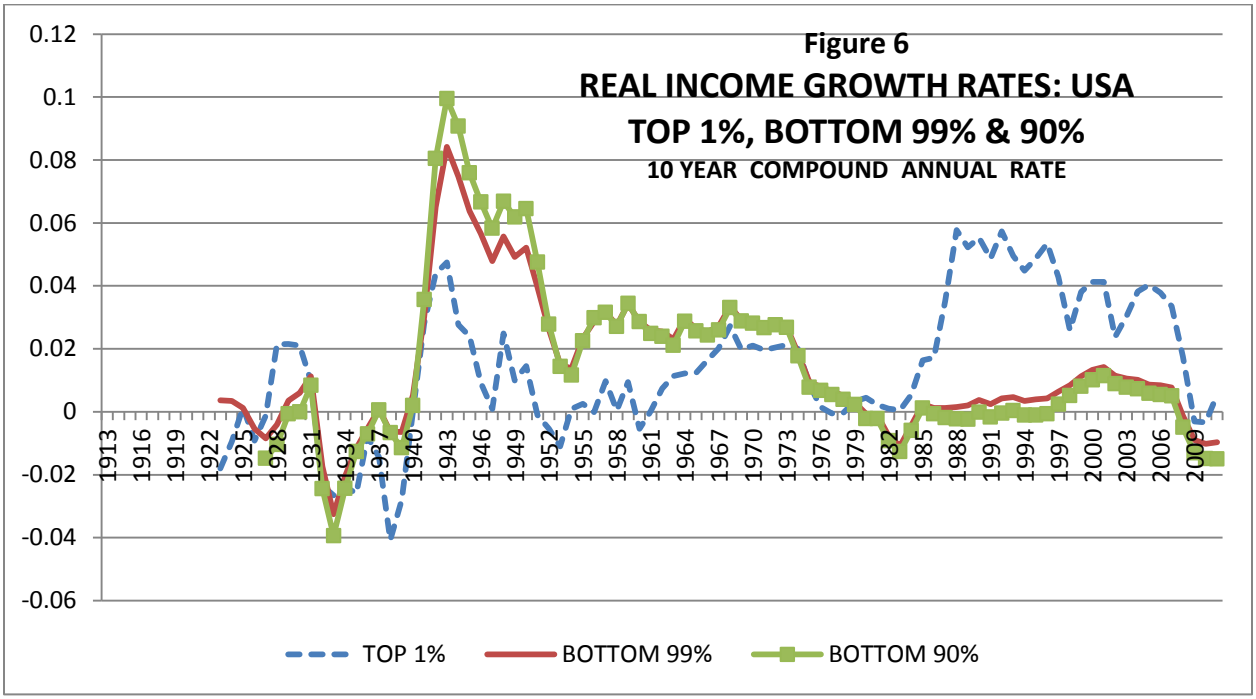
Source:The World Top Incomes Database
http://topincomes.g-mond.parisschoolofeconomics.eu/
Date 21/04/2013
Time 09:44:43

To show the changes over time in relative income growth rates underlying the changes in income shares presented in Figure 3, Figure 6 plots the ten year compound rate of real growth in average incomes of the top 1%, bottom 99% and bottom 90% in the U.S., while Figures 7 and 8 do the same for Canada and Australia. In the U.S., there was a roughly 30 year period in which income growth rates were quite similar – nearly identical from 1967 to 1982 and quite close from 1952 to 1967[23]. During this long period of approximately balanced growth and consequent stability in the income distribution, studying inequality was sometimes denigrated as being "about as interesting as watching grass grow[24]". When income inequality is roughly constant, it also becomes plausible for macro-economic theorists to start to ignore it, and during this period the "representative agent" paradigm in

[23] In the U.S., rough equality of growth rates and income share stability is also observed in 1925-1940.
[24] This gibe has been ascribed to Aaron (1978) by, among others, Salverda, Nolan and Smeeding (2009:4).

macro-economics replaced earlier concerns with factor income shares and the implications of distribution for systemic stability.

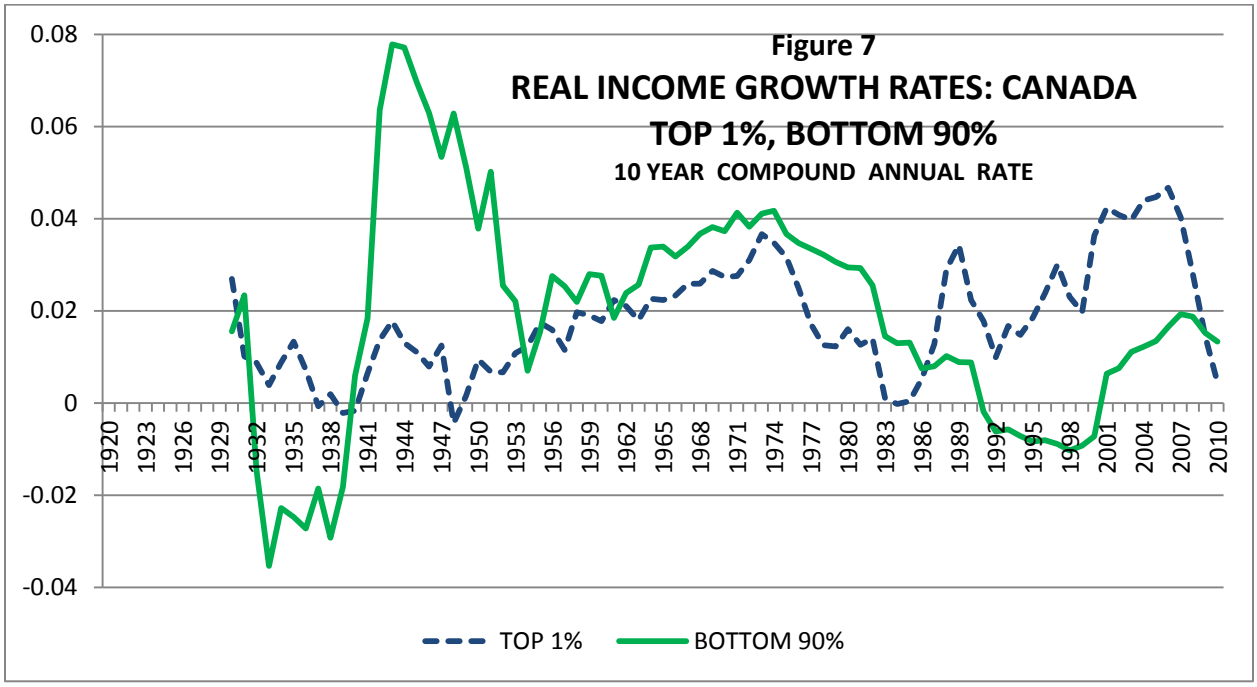
However, Figure 6 also shows dramatic difference in U.S. income growth rates in the 1940s, and since 1980. Evidently, there can be quite long periods of unbalanced growth. In the 1940s, bottom end incomes grew much more strongly than those at the top end and American income inequality lessened dramatically – but the last thirty years have been dominated by the opposite dynamic.



The World Top Incomes Database
http://topincomes.g-mond.parisschoolofeconomics.eu/
Date 21-04-2013
Time 09:44:43

United States-Average income per tax unit
Real 2011 US Dollars
Tax units are families (see source for details).

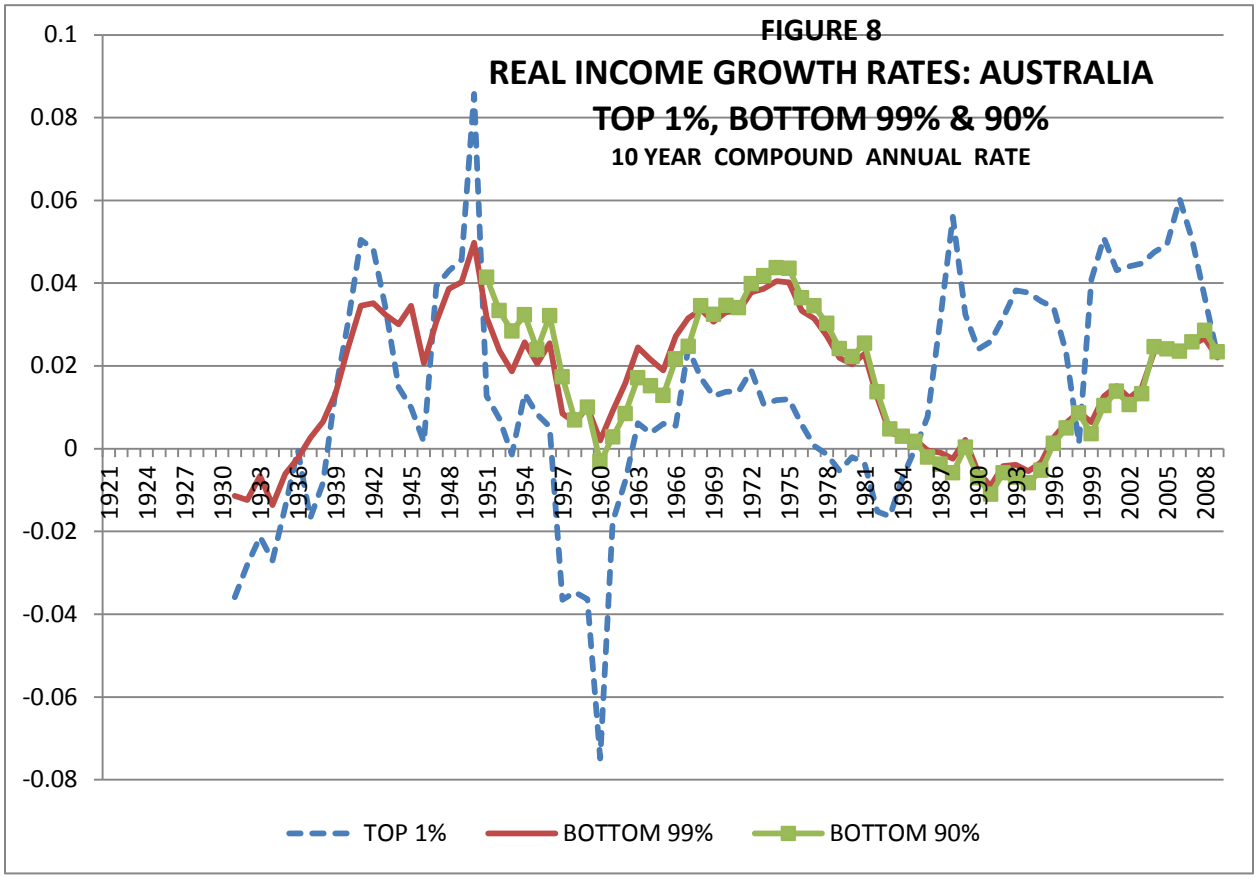
Compared to the U.S., Canadian data show a different pattern in the 1930s, when top 1% incomes were stagnant but bottom 90% incomes fell appreciably in real terms. Although the post-war period of balanced income growth rates appears to last a little longer in Canada, until roughly the mid- 1980s, this is still less than half the entire 81 year period of observed data. Corresponding fairly closely to movements in the unemployment rate and the emergence of a resource boom in Canada, the period since 2000 also shows better income gains for the bottom 90% than during the 1990s. The cyclical impact of the Great Recession on top end incomes shows up in 2009-2010, but because the U.S. data extend to 2011, while Canada's only comes to 2010, Figure 6 can show the start of U.S. top income recovery, but Figure 7 cannot yet present the comparable Canadian rebound.



Source:

The World Top Incomes Database	
http://topincomes.g-mond.parisschoolofeconomics.eu/	
Date	21-04-2013
Time	09:46:45

In Australia, the ten year growth rate in average income data for the bottom 90% coincides almost entirely with that of the bottom 99% for the years in which both are available (post 1951). Although the growth rate of top 1% incomes appears to be more volatile until the 1950s, there is no sharp war-time surge in relative income growth to reduce inequality – the bottom 99% and the top 1% appear to share both the negative growth of the 1930s and the positive income growth of the 1940s at comparable rates. The thirty years after the Korean War was a period of declining inequality in Australia – part of what Leigh (2013) has called the Great Compression – when top incomes stagnated even as those of the bottom 99% grew strongly. As in Canada, it is after the mid 1980s – i.e. a bit later than in the U.S. – that Australia sees the acceleration of top end income growth. As in Canada, there is also some resource boom based growth at the bottom after the mid 1990s.



Source: The World Top Incomes Database
http://topincomes.g-mond.parisschoolofeconomics.eu/
Date 23-04-2013
Time 16:40:08

The rapid growth of real incomes of the bottom 99% in Canada and the U.S. after 1940 started from a situation in which:

- the mass unemployment of the 1930s was being rapidly absorbed into wartime production;
- price and wage controls during World War II compressed wage differentials and profit margins;
- a relatively high percentage of workers employed in agriculture meant that rural out-migration could have a significant impact on average wages and productivity;
- a relatively low percentage of women in the paid labour force implied that rising female employment could have a big impact on household money income;
- substantial room for increase in primary, secondary and post-secondary enrolment meant that high marginal returns to human capital investment were available for many people;

- capital deepening in sectors catching up to the technological frontier could produce substantial increases in marginal productivity in those sectors[25];
- rising unionization rates produced, for nearly thirty years, a labour movement with influence both in workplace bargaining and in social policy determination;
- in the political economy of social policy, the 'hard left' political option had a "threat effect" on political elites – who agreed to progressive taxation and expanded transfer programs that recycled top end incomes.

Wartime mobilization and controls were "once only" events. The structural changes of development – urbanization, female labour force participation, widespread secondary and post-secondary education – were spread over a number of years, but such shifts show up as an increase in the growth rate of average incomes. Part of the reason why the bottom quintiles of the income distribution in Canada and the U.S. have seen smaller income increases in the last thirty years, compared to earlier decades, is structural changes were basically complete well before 1980. If these general trends were similarly operative in Australia, they may also help explain the strong growth of middle class incomes observed there prior to 1980 – and its slowing since then.[26]

Overall, however, balanced growth is not the norm. The thirty year period 1952-1982 appears to be a happy accident of history during which income growth rates at the top and the bottom were roughly equal. Balanced growth then made it plausible to ignore possible changes in the income distribution and to emphasize the steady state properties of economic systems inhabited by representative agents – but this period was a historical anomaly. Unbalanced growth has not been quite as common in Australia as in the U.S. or Canada, and prior to 1980 there appear to be unique features to each country's pattern of relative income growth rates. However, in all three countries the last thirty years have seen the emergence of distinctly higher income growth rates for the top 1%, compared to everyone else – unbalanced growth has become the 'new normal'.

A differential in annual income growth rates of 2.5 to 3 percentage points does not sound like much. Indeed, if the differential is short-lived it does not amount to much. But this reality has been with us for almost three decades. What will the future look like if such trends continue? As Table 1 shows, if the income growth rate differential continues for about as long as it has already lasted, ever-larger absolute differences in income and an ever-increasing income ratio are the result.

In the U.S in 1984, the median household income was $47,181, which grew by 0.3% annually to $51,100 in 2011.[27] The top 1% got an average income (not including capital gains) of $376,000 in 1984, which grew to $879,000 in 2011 – a compound annual rate of 3.14% per year [28]. Over this 27 year

[25] By 1946, in Canada and the US, the Depression and years of wartime diversion of production had left a substantially depleted capital stock, embodying aged technologies, implying large gains to new investment.
[26] Although the decline of unions and the demise of the threat effect of the hard left are, strictly speaking, not examples of one-time structural changes, both have been, in all three countries, unambiguous.
[27] Census Bureau Table H-8. Median Household Income by State: 1984 to 2012.
[28] The best year for the top 1% was 2007, when their average income was $1,035,476 (excluding capital gains, 2011 dollars, taken from World Top Incomes Database). Calculated from 1984 to 2007, the compound annual

period, the income gap thus increased from about $330,000 to $830,000 – i.e. by about $500,000. If the 1984-2011 compound annual growth rate of 3.14% continues for another 20 years the top 1% will get an average $1,630,000 in 2031. If the median income growth rate of 0.3% continues, the median will only be $54,000 in 2031, for an income gap of $1,578,000. If unbalanced growth at these rates continues until 2038, the gap will rise to $1,971,000 , and thereafter the average annual dollar *increase* of the top 1% will increasingly exceed the *total* income of the median household. As Table 1 shows, the ratio of top 1% average income to median income more than doubled (8.0 to 17.2) from 1984 to 2011 and a continuation of the same growth rates implies it will more than double again (to 36.2) by 2038[29].

Table 1
IMPLICATIONS OF INCOME GROWTH AT HISTORIC RATES - USA

	Median Household Income	Top 1% Average Income	Dollar Gap	Top 1% Annual Dollar increase	Top 1% /Median Ratio
1984	47,181	376,135	328,954	10,341	8.0
2011	51,100	878,960	827,860	26,025	17.2
2031	54,207	1,632,378	1,578,172	49,613	30.1
2038	55,338	2,027,304	1,971,966	61,992	36.6
Growth Rate 1984-2011	0.30%	3.14%			

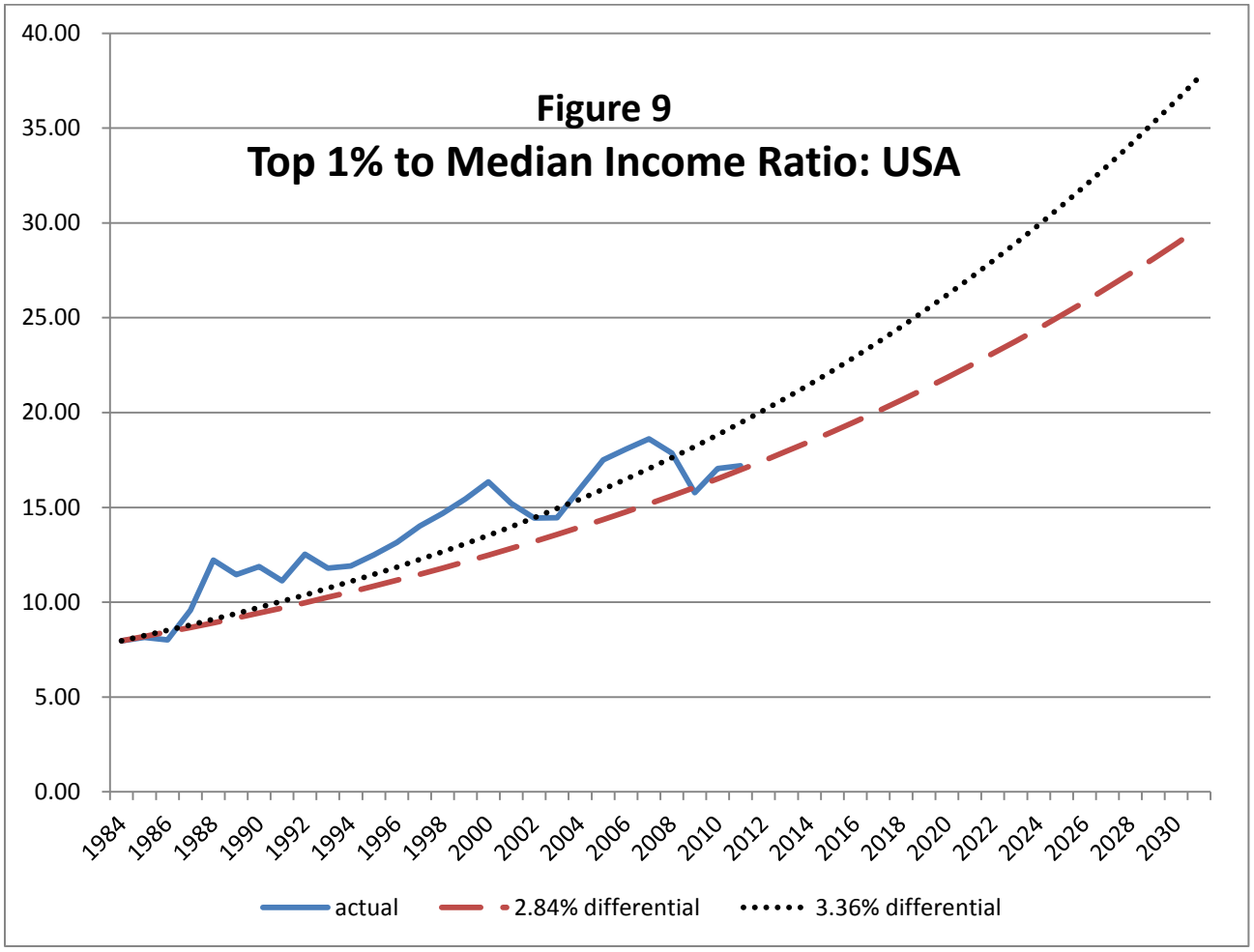
Source: The World Top Incomes Database 2011/2012 dollars
http://topincomes.g-mond.parisschoolofeconomics.eu/
Date 21/04/2013

Figure 9 plots the ratio between the average real income of the top 1% (excluding capital gains) and real median household income. In addition to the actual ratio 1984-2011, two projections are presented – one assuming a gap in growth rates of 2.848%, which is the differential over the period 1984-2011 between the compound income growth rate of the top 1% (3.14%) and the growth rate of median household (0.30%). The other projection uses a base period of 1984 to 2008, during which top

growth rate of average top 1% income was 4.4%. Starting from actual 2011 income, a growth rate of 4.4% means the top 1% average income would be 50.8 times larger than median income by 2038.

[29] Income growth rates are unequal within the top 1% (see Figure 3), implying increasing inequality within the top 1%.

1% incomes grew at 3.9% while median income grew at 0.53%, for a gap in growth rates of 3.36%. Within twenty years (by 2030), the lower gap implies that the income ratio will rise to 30:1, while the higher implies a 38:1 ratio – compounding to even greater gaps in later years.



The size of these emerging income gaps may prompt the reaction: "Impossible – these gaps are too large!" Section 3 therefore asks: what plausible market mechanism will change the underlying income growth rates?

3. Will Market Processes Automatically Restore Balanced Growth?

"More inequality over time" and "more rapid income growth at the top" are two different ways of describing the same reality. Stabilizing the income distribution in the U.S., Canada and Australia requires equality of income growth rates – either an acceleration of the income growth rate of the bottom 99% or a decline in the income growth rate of the top 1% would do. Is enough of either likely to happen as a result of "equilibrating" market forces?

If the issue was the division of national income between labour and capital, there might be grounds for optimism. For many years in economics, this was seen as the 'primary problem' of income distribution[30]. However, neo-classical economists were able to argue that since the accumulation of capital by firms means a rising capital/labour ratio, the diminishing marginal productivity of capital and the rising marginal product of labour produces rising wages and a decline in the rental rate of capital – which implies an inherent tendency to the restoration of stability in factor shares of income. Indeed, generations of economists have been brought up on the hypothesis that the Cobb-Douglas production function (which was devised precisely to explain the constancy of factor shares in the distribution of income, despite an increasing capital /labour ratio) is a reasonable approximation to actual technical relations of production.

But stability in capital/labour shares is not the issue in the current context, because much of the recent increase in top end incomes has been in salary and other labour income[31]. Hence, if the increasing inequality of the last 25 years has been the inescapable implication of a difference between the long term rate of income growth of the top 1% and everyone else, is there an automatic economic mechanism of self-adjustment within labour markets that will restore balanced growth, and thereby stabilize market income inequality?

Could it be, for example, that top end incomes will soon stop growing so rapidly because the top 1% will run out of steam – i.e. be unable to further increase their work effort? After all, individual "effort" – both hours of work and work intensity per hour – cannot increase forever. Hours of work probably hit a physiological maximum somewhat before 6,000 per year (16*365 = 5,840) [32]. Work intensity per hour is

---

[30] Indeed, of political economy, see Ricardo (1831).

[31] See Veall (2012), Leigh (2013) or Alvaredo et al (2013). However, if "Capital's Share" in National Income included income that derives from *control over* capital, as well as formal *ownership of* capital, most of CEO compensation would be counted as part of capital's share and the factor origins of the incomes of the top 1% would look quite different. Gabaix and Landier (2006, 2008) find differences in labour characteristics (individual effort or talent or incentives or qualifications) play a minor role in explaining CEO compensation. They argue that the six-fold increase in CEO compensation in the US between 1980 and 2003 is "an equilibrium consequence of the substantial increase in firm size".

[32] The 24 hour day and the physiological necessity for some sleep set an upper bound for maximum physically possible labour supply, but consuming income also takes time. Hence, in the standard neo-classical labour/leisure choice model of labour supply, utility-maximizing agents facing a continuing series of increases in their net hourly wage will maximize their annual labour hours at less than the physiological maximum, before moving to the backward-bending segment of their annual labour supply curve. Once the top 1% are on their backward-bending segment, increases in their marginal income tax rate will unambiguously increase tax revenue. Both the upper

less easy to measure, but it is implausible to think it can increase without limit. If the more rapid increase in top end incomes of the last 25 years is due to ever greater labour supply by the top 1%, at some point this process must end.

The labour supply explanation for more rapid top end income growth appeals to the possibility that greater "incentives" might have motivated an increase in the level of effort exerted by corporate executives and other highly paid professionals – top marginal tax rates have been cut significantly since the 1980s, in all three countries[33]. This perspective has been much criticized, not least because it fails to explain the timing of income increases (see, for example, Veall, 2012). As well, the labour supply explanation also has to account for the fact that there were much greater proportionate increases in income, the farther one goes up the distribution of income. As Figure 4 showed, incomes in the bottom half of the top 1% grew much less rapidly than those in the next four tenths of the top 1% or the top tenth of the top 1%. As a result, in the U.S., by 2011[34] the top 1-0.5% had increased their average income (excluding capital gains) to 188% of the 1982 level, while the top 0.5-0.1% had increased average income to 222% of 1982 and the top 0.1-0.01% had average income which was 306% of 1982. If these increases were due to increased effort, it implies that the top 1-0.5% must have been working only about half (52%) as hard in 1982 as in 2011, while the top 0.5-0.1% of 1982 were working 45% as hard and the top 0.1-0.01% were even slacker thirty years ago, working less than a third as hard as the comparable group in 2011[35]. Is it plausible that the elite of 1982 were really that much lazier – especially at the very top?

In my view it is much more plausible to think that the people at the top of occupational and organizational hierarchies have always worked very hard to succeed, that such social positions are rationed and that top end labour markets are effectively segmented[36] from the general labour market. The model of the labour market that makes sense to me notes, as Gabaix and Laudier (2006, 2008) have found, that pay at the top of the corporate heap depends on the employing firm's size – and for monopolistically competitive firms, size depends on the scale of the market. Since 1980, many firms in

---

bound on effort supply and the possibility of backward-bending labour supply are ignored by Veall (2012), Fortin et al (2012), Piketty, Saez and Stantcheva (2011) and the literature on the elasticity of taxable top end income with respect to the net of tax salary rate.

[33] The standard neo-classical labour/leisure choice model of labour supply incentives is a story about the *level* of effort induced by a given marginal after-tax wage. From one year to the next, it can explain how greater incentives for the top 1% can perhaps produce an increase in their hours of work and intensity of work– a shift up in effective labour supply which shifts up their income level and their income share. But if top end incomes are to increase year after year, for many years, a long series of such increases in incentives and labour supply are required.

[34] Arguably, since 2011 incomes were still heavily influenced by the Recession of 2008, the period 1982-2007 is more relevant for this argument - over the period 1982-2007 the top 1-0.5%, the top 0.5-0.1% and the top 0.1-0.01% were up by 216%, 271% and 372% respectively.

[35] The top 1-0.5%, the top 0.5-0.1% and the top 0.1-0.01% all face the same constraint on maximum feasible work hours. If one assumes that they all had full time jobs (2,000 hours = 50 weeks per year x 40 hours per week) in 1982, and that working 16 hours per day 365 days per year is possible, these increases are just barely possible.

[36] The initial focus of the labour market segmentation hypothesis was the poverty population – see Gordon et al (1982), Osberg et al (1986). It requires: (1) that the determinants of labour market rewards and the mechanisms of labour allocation differ across subsets of jobs and labour market participants and (2) that there be barriers to inter-segment mobility. The CEO labour market satisfies both requirements.

Canada, the U.S. and Australia which previously operated on a national scale have expanded into global markets, as trade barriers and transportation costs have fallen and modern telecommunications, information systems and managerial innovations have made effective management of large dispersed organizations more feasible. As the scale of global operations and the size of potential profits grows, the top management team takes a share – and the rents to their hierarchical positions increase with their rank in the hierarchy and with market size[37].

In entertainment and sports, audience size has similarly grown, at least for those at the top of their particular hierarchy who can now reach global audiences. The outsize returns obtained at the top end of financial services also rely on the scale of financial markets and individuals' placement in the hierarchy of market differentiation – again, rents to top hierarchical positions (which Rosen (1971) called 'superstar' status) increase with scale of market supplied. Although individual markets and firms will grow at different rates, to a first approximation the average rate of growth of market size, and therefore the average rate of income growth of 'global' players, will be driven by the rate of growth of global markets, which has been significantly faster than growth in Australia, Canada or the U.S..[38] Since one can expect continued rapid growth in China, India and many other nations (including sub-Saharan Africa) there is every likelihood that the growth rate of global markets will continue to be considerably greater than that of domestic demand.

Lydall's (1959, 1968) model of pay in hierarchies has long predicted that the steepness of the upper tail of the distribution of earnings (i.e. Pareto's α) will depend on the span of control at each level of hierarchy and wage norms. In my view, administrative hierarchies are best seen as a type of team production, where accurate measurement of an individual's true marginal product is rarely feasible, so the norms of internal labour markets[39] serve to determine relative wages and expected levels of effort. Norms of pay set at the very top of enterprises servicing global markets attenuate somewhat within those hierarchies as they trickle down to less senior members of top corporate management[40]. However, norms are central to pay determination for this group partly because they always matter hugely and especially because at the top end of corporate and public sector hierarchies in rich countries,

---

[37] 'Rent' in this context means the excess of pay over the supply price of labour. The analysis here differs from Stiglitz (2012:Chapter 2) who emphasizes 'rent-seeking'- which he generically defines as "grabbing a larger share of the wealth that would otherwise have been produced" (2012:40). It consequently does not support his optimism that more perfectly competitive markets would change the income growth rate differential by much. Mankiw (2013) and Kaplan and Rauh (2013) argue that observed U.S. income trends reflect the normal functioning of actual markets. This paper does not share their belief in marginal productivity explanations, or the presumption that individuals ethically 'deserve' to be paid their marginal product (if it could be observed). Baker (2006) also notes that the "normal functioning" of markets includes a disproportionately large role for affluent individuals in setting market rules, often to their own advantage.

[38] For the 25 year period 1987-2012, the simple average of annual growth rates of world GDP was 4.9%, compared to Australia (3.3%), Canada (2.5%) and the U.S. (2.6%). see http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG

[39] A classic statement is Doeringer and Piore (1971),

[40] In the global economic system, a few cities (e.g. New York, London) offer a range of corporate and financial services that second tier centres (e.g. Sydney, Toronto) cannot match, while third tier centres (e.g. Halifax) can at most aspire to hosting niche players. Hence, top 1% incomes are on average much lower at lower levels of the urban hierarchy, but similarly growing as global scale grows.

most creature comforts have long since been satisfied. At this level, relative income is the remaining motivator. Money income is the marker that shows who is winning in the race for success, but "winning" – or at the very least "keeping up" – is the main event.

The rate of growth of compensation at the top of global corporations therefore sets the benchmark for the national private sector, which in time determines what their peers at the top of public sector hierarchies – e.g. university presidents and senior civil servants – come to expect as the "fair" rate of increase of normal remuneration for people in their sort of position. Hence, for "the globals and their peers" who sit at or near the top of organizational and professional hierarchies, the rate of growth of globalized markets seems likely to assure continued increase in corporate scale and continued growth of top pay. As the pleasures of the globalized brands of consumer society are discovered by hundreds of millions of newly middle class households around the world, the rents available to monopolistically competitive firms grow, and with them the salaries of their top management teams, with trickle down benefits for their peers.

For present purposes, I think of the bottom 99% as "locals", who are not linked to top end internal labour markets and whose pay and employment prospects depend on the aggregate supply and demand for labour within their own national and local labour markets[41]. If unions could have effectively mobilized collective action, they might have restrained the escalation of corporate norms of pay (Western, 2011) and bargained for a share of global corporate rents – but private sector union membership has declined significantly in all three countries over the last thirty years. Because global firms can usually site their production in many possible places around the world, international competition for new investment sets local labour productivity growth as an approximate upper bound to their rate of average income growth (although slack local labour markets can mean, as in Canada 1980-2000, that average real wage growth falls short of that). The resource sector is a significant exception, since the immobility of resource extraction activity enables some local workers to extract part of the resource rent, to an extent that depends on the attempted speed of resource development and the level of unionization.

In this perspective, the long run constraint on the income growth rate of 'locals' is the local rate of labour productivity growth, while the long run income growth rate of 'the globals and their peers' depends on the rate of growth of global markets, which is significantly higher. Clearly, a full discussion of this perspective would require much more space. It is outlined here to indicate that at least one view of the world is consistent with a continuation of the long-run differential between the top 1% and everyone else in market income[42] growth rates.

---

[41] See Agell (1999) and Agell and Lommerud (1993)

[42] More precisely, for any individual, $Y = w*H + r*K$ where Y is annual market income, w is the average annual hourly wage, H is total paid work hours per year, r is the average rate of return on wealth and K is the net assets of individuals. The key variable for long term income growth rates is w – more specifically, $\partial w/\partial t$. Countries with large agricultural sectors or low female labour force participation may be able to expect increases in average paid annual work hours ($\partial H/\partial t > 0$) for a significant period of time. However, those days are gone for Australia, Canada and the U.S.. Section 4 will discuss net saving at the top and bottom ($\partial K/\partial t$). For now we can note that the rate of increase of the capital income of the top 1% will be a lagged function of their past rate of income and savings

What is the alternative hypothesis? Why exactly might the growth rate of the average income of the bottom 99% accelerate substantially to match the recent income growth rate of the top 1%? Why exactly might the growth rate of the average income of the top 1% slow substantially to match the income growth rate of the bottom 99%? Can one, for example, realistically expect that improving education will significantly raise the long term growth rate of the average income of the bottom 99% – i.e. can education be "the great equalizer" (Leigh, 2013:77-81)?

There are many 'non-economic' reasons to be in favour of improved education – not least of which is the impact of education on dimensions of life such as social capital and social cohesion[43]. However, as Fortin et al (2012:138) note "caution is required in thinking about education as an inequality reducing policy" since under some circumstances it may not improve equality of pay[44]. As well, even if improving educational attainment reduced inequality of opportunity between the disadvantaged and the middle class and reduced wage differentials within the middle class[45] (e.g. the university/high school average wage ratio), this does not directly imply an acceleration of the rate of average income growth of the bottom 99%.

As well, increased education has inherent upper bounds, if educational quality is to retain its meaning, and the gains from increase will be the gains of those who are now at the margin. Diminishing marginal returns have to be expected. [In Canada, for example, the fact that 56% of the 25-34 age cohort already have a tertiary education necessarily means that further expansion will be exploring the lower tail of the IQ distribution.] Educational initiatives are, moreover, policy changes with long time lags. Even an all-powerful leader with a magic wand which could instantaneously and totally revolutionize primary and secondary education would have to wait 12 years to see the full impact on high school graduates. Because the flow of new graduates entering the workforce each year is only about 1/40th of the workforce, it would be roughly another twenty years before they were the majority of workers.

Furthermore, the Canadian experience already offers a guide to the extent to which expansion of education can be expected to shrink the income growth rate differential between the top 1% and everyone else. Although Canada, Australia and the U.S. have well-educated workforces, they differ significantly in tertiary level educational attainment. For the age group 25-64, Canada was the highest at

---

growth. (For the 99%, returns to any personal savings often come implicitly, via owner-occupied housing, rather than in market income.)

[43] See, for example, Wolfe and Haveman (2001) or Osberg (2003)

[44] Within a neo-classical perspective, Beaudry and Green (2003, 2005) argue that when skilled labour is more plentiful, one of the implications of endogenous technology choice by firms may be a decline in the labour demand facing low-skill workers. As well, the institutional perspective has long argued that education serves mainly as a credential, whose relative level rations access to a given set of desirable jobs – see Bowles and Gintis (1976).

[45] Because the earnings and personal characteristics of the middle 90% of the population are reliably captured by sample surveys, they have been the focus of much analysis by labour economists – but shifts in the inequality observed within that group have little to say about the long-run income growth rate of the top 1% and that of everyone else. Frenette, Green and Milligan (2007) used census data in Canada to show the importance of the tails of the income distribution. However, the popularity in labour economics of the "90/10 ratio" as an indicator of inequality is also an implicit indicator of the prevalence of the neglect of the tails (e.g. Blau and Kahn (2009)).

51% in 2010, considerably greater than the U.S with 42 % or Australia with 38%[46]. Canada's investment in education has certainly been important for many other reasons – but it has not produced a long term acceleration of the rate of income growth of the bottom 99% and it has not equalized income growth rates. Conversely, despite Australia's bottom ranking in tertiary education among these three countries, it is the only one among them that has seen appreciable real income growth for the bottom 90%.

Since annual earnings are the product of the average hourly wage and the annual hours of paid work, reducing unemployment would help increase bottom end incomes. Although the Bank of Canada has focused solely on inflation control and has restrained aggregate demand at the slightest hint of tight labour markets for the past quarter century, this is not the only possible monetary policy setting. In the latter 1990s in the U.S., the Federal Reserve allowed unemployment to decline significantly and the Reserve Bank of Australia has presided over a decade of low unemployment and somewhat higher inflation – in both cases proving again that workers wages' go up when there are enough jobs to go around. However, although these episodes confirm that a macro-economic policy which tightened labour markets could increase the level of average earnings, raising the long term growth rate of real income is more difficult[47].

In short, in the U.S, Canada and Australia one has to ask: which plausible model predicts that, anytime soon, the market mechanism will, on its own, either slow the growth rate of average income for the top 1% or increase the income growth rate of the bottom 99% to the extent that they are equalized? Unbalanced income growth seems more likely to continue – so Section 4 examines some implications.

4. The Instability Implications of Unbalanced Income Growth

Unbalanced income growth – i.e. increasing income inequality – necessarily has general equilibrium effects and socio-political impacts, which will increase over time, as the size of the income gap increases. Since income must be either consumed or saved, Section 4a analyzes the instability implications of the increasing savings of the top 1% while Section 4b discusses the impacts of their increasing consumption.

Because this essay has been discussing the U.S., Canada and Australia, an important caveat is that "size matters". Since the U.S. is so much larger than Canada or Australia, and global capital markets are linked, the savings of the top 1% of the U.S. are far more important to the stability of financial markets than any impact by the Canadian or Australian top 1%. As well, as Figure 5 showed, top 1%

[46] For the 25-34 age cohort, Canada had 56%, the U.S. had 42% and Australia had 44% with tertiary education. See Education at a Glance 2012 - © OECD 2012, http://dx.doi.org/10.1787/888932664233., accessed online 24/10/2013

[47] Peach, Rich and Cororaton (2011), using US data, estimate a Threshold Philips Curve Model and demonstrate its superior fit to US inflation dynamics. Moving to the bottom end of the unemployment range accelerates real earnings growth temporarily, but long run real income growth rates are constrained by productivity growth.

incomes are already, in real terms, much higher in the U.S. than in Canada or Australia (both absolutely and relative to median income). This implies that income gaps are compounding on a higher base differential in the U.S. than elsewhere – and so becoming much bigger, much faster[48]. Both influences imply that at any point in time, the instability stresses implied by unbalanced growth will be greater in the U.S. than elsewhere – but in all three countries, the inevitable consequence of continuing growth rate differentials is that the absolute size of income, savings and consumption gaps grow over time.

4a Instability Implications of the Increasing Savings of the Top 1%

Rising incomes at the top of the income distribution imply an increasing flow of their savings[49] into financial markets. But financial instruments are inherently both an asset to the holder, and a liability to the issuer. In order for the increasingly affluent to acquire ever more financial assets, somebody else has to acquire ever more financial liabilities. Indeed, macro-economic balance requires it. If aggregate expenditure is to equal aggregate income, whenever the increasingly affluent abstain from spending some of their increase in income, some other agent has to spend more than their income. By borrowing and spending, debtors – both households and governments[50] – balance the real flows of the economy, simultaneously increasing their stock of debt.

Kumhof and Rancière (2010:3) have noted that both the Great Depression of 1929 and the Great Recession of 2007-2008 were preceded by a sharp increase in income and wealth inequality, and by a similarly sharp increase in debt-to-income ratios among lower- and middle-income households. They argue that when those debt-to-income ratios began to be perceived as unsustainable, a financial crisis became inevitable – only needing a trigger. Their idea – that ever growing incomes at the top produce an ever increasing flow of loanable funds which eventually produces a crisis in financial markets and a recession in the real economy – has a long history. In the 19th century, Marx argued strongly that cyclical instability was inherent to capitalism and "under-consumptionists" like Hobson[51] ascribed the growth of British imperialism and overseas investment in the late 1800s to inadequate domestic absorption of the potential output of capitalism. Milanovic (2009) and others have also argued that the root cause of the 2008 financial meltdown is income inequality.[52]

---

[48] For example, the impact of increasing income differences on the political system in Canada will be smaller, because Canadian income differences are smaller – and also because campaign spending laws limit the contributions of major donors.

[49] Dynan et al (2004) conclude that the marginal propensity to save increases with income – but the argument here only requires that the marginal propensity to save of the top 1% is positive and that some of that increase in saving is in financial assets. Increased savings by the affluent is quite consistent with greater consumption, and net dissaving, by the poorer 99% implying a declining average *national* savings rate.

[50] The Kumhof and Ranciere (2010) model has no explicit government sector, but Kumhof has noted that government can be seen as an intermediary in debt, as the top 1% buy government bonds which finance public sector deficits and thus sustain current public consumption – while society as a whole incurs corresponding future tax liabilities. (private communication- September 2012).

[51] See Marx (1894) Vol. 3, Chapter XV; Hobson (1900, 1905). Amdekar (2012) provides a modern re-interpretation.

[52] Bordo and Meissner (2012) provide a negative answer to the general question: "Are business cycle downturns always preceded by increases in inequality?" – but this is not the same question as whether increasing inequality caused the 1929 and 2008 recessions.

The contribution of Kumhof and Rancière is to illustrate formally, using a dynamic stochastic general equilibrium model, that financial crises can be driven endogenously by income inequality. They argue (2010:22) that the key mechanism, reflected in a rapid growth in the size of the financial sector, is the recycling of part of the additional income gained by high income households back to the rest of the population by way of loans, thereby allowing the latter to temporarily sustain consumption levels and thereby maintain macro-economic balance[53]. However, continued stagnation in the incomes of poor and middle income households means that loans and leverage keep growing, and therefore so does the probability of a major crisis that, in the real world, typically also has severe implications for the real economy[54].

Well before the 2008 recession, Leamer (2007:1) argued that "housing starts and the change in housing starts together form the best forward-looking indicator of the cycle." Periodic housing booms are fed by the cost and availability of credit and by self-reinforcing bubbles of expectations of future increases in house prices. Fueled partly by the paper wealth of rising house prices, consumption booms borrow real output from future periods, as overhangs of past excess housing construction take time to be absorbed by market demand. As well, in Canada, the U.S. and Australia, owner-occupied housing is the main asset type held by middle income households. Highly leveraged by mortgage debt, middle class net worth is very sensitive to house price changes[55]. The financial sector now makes it easy to monetize existing home equity, so house price bubbles can be used both to trade up in the housing market and to increase non-housing consumption. But although a middle class consumption race can be fed by the escalating norms of top end ostentation and illusions of wealth, eventually the housing bubble has to burst – and Americans saw the long down side of housing price volatility and financial leverage after 2007. Although home mortgages enable financial leveraging to be a normal middle class phenomenon, the price of the main middle class asset (housing) depends heavily on house price expectations and interest rates[56], both of which are quite variable. As households become increasingly indebted, their probability of default increases and financial assets become increasingly fragile.

The 'debt stability' equation has been most often used in the context of public sector finances, but its logic is equally applicable to households and the private sector. It starts from the accounting

[53] Kumhof et al. (2012) argue that poorly developed internal financial markets in developing nations imply the elite there have bought U.S. financial assets (thereby financing US current account deficits).

[54] Kumhof emphasizes U.S. experience, as is appropriate given its size and impact on global capital markets, for which the assumption of stagnancy of bottom end incomes is plausible. However, the key issue for debt fragility is that there is a differential in growth rates and some inter-sectoral lending. If top 1% incomes grow at r_1 and bottom 99% incomes grow at r_{99} and $r_1 > r_{99}$. If financial savings A_1 by the top 1% are a constant fraction of income, $\partial A_1/\partial t = r_1$ (the results below are even stronger if financial savings increase with income). But financial assets are the liabilities of their issuers – either other households [D_{99}] or governments [D_G] – so $A_1=[D_{99} + D_G]$. Because the total liabilities of other agents grow at r_1 and $r_1 > r_{99}$, the growth of liabilities is faster than the private income growth rate of the 99% or the total tax base (which is an income share weighted average of r_1 and r_{99}), hence debt/income ratios rise over time.

[55] Wolff (2011: 39, 125) finds that in 2007, the principal residence was 65.1% of the wealth of the middle three income quintiles. The 2001-2007 boom in housing prices swelled their paper asset values but left them highly exposed to the ensuing bust – between 2007 and 2009, median wealth (net worth) fell by 35.1%.

[56] The ultra-low level of current interest rates increases sensitivity to small interest rate changes (e.g. an increase from 3.0% to 3.5% in mortgage interest means monthly mortgage payments go up by about a sixth).

identity that the stock of debt at a point in time is equal to the previous period's debt plus interest accruing minus any "Primary Balance" surplus of income over current spending which can pay back the debt[57].

(1) $D_t = (1 + r_t)* D_{t-1} - PB_t$

D_t = Debt in period t

r_t = average rate of interest in period t

PB_t = Primary Balance in period t

The burden of debt depends on its size relative to income[58] – for public finances, the Debt/National Income (GDP) ratio is the crucial economic statistic, while each household confronts their personal Household Debt/Household Income ratio. When income grows faster than debt, the Debt/Income ratio declines. If debt and income grow at the same rate, their ratio is constant. In either event, debt is on a sustainable path. However, if the Debt/Income ratio is increasing over time, an ever larger fraction of expenditure must go to servicing the debt rather than current spending, a process which is eventually unsustainable.[59] Equation (2) derives directly from (1):

(2) $\Delta (D/Y)_t = (r_t - g_t)*(D_{t-1}/Y_t) - (PB_t / Y_t)$

Y_t = Income

g_t = growth rate of income

$\Delta (D/Y)_t$ = change in Debt/Income ratio

In equation (2) the first term makes clear how much debt stability depends on the interaction between the overhang of debt from the past (D_{t-1}/Y_t) and the interest rate / growth rate differential ($r_t - g_t$). Whenever the interest rate exceeds the income growth rate (i.e. when $r_t - g_t > 0$), past debt is compounding faster than income is growing – and when the stock of past debt starts to feed on itself in this way, expenditure surpluses must be continual, and increasing, just to stabilize the Debt/Income ratio.

---

[57] For the public sector PB = ($Taxes_t$ – Program $Expenditures_t$); for households PB_t=($Income_t$ – $Consumption_t$)

[58] In Q2 2013, the household debt / household income ratio was at a record high in Canada, (over 1.63), but a bit lower in Australia (1.48). The aggregate ratio is, of course, only important as an indicator of trends in the upper tail of that distribution – i.e. the percentage of households with debt/income ratios much greater than average. Although average household Net Worth has also increased, this statistic is not comforting since (1) household real estate assets may have "bubble" prices and (2) it is the mismatch of assets and liabilities across households that produces financial crises – specifically, the 1%/99% mismatch.

[59] More exactly, debt finance charges ($r_t D_t$) increase if $\partial D_t/\partial t > - \partial r_t/\partial t$ (remembering that $r_t \geq 0$). When interest rates on issued debt are zero or near-zero or when the central bank creates the money necessary to purchase debt issue (which amounts to the same thing), the public sector deficit can be insulated from a rising Debt / GDP ratio – but neither condition is long-term sustainable.

Furthermore, the dilemma for the public sector is that the Great Recession of 2008 forced governments to stimulate aggregate demand by cutting taxes and increasing spending. Counter-cyclical spending of governments, in response to the collapse in real output and employment occasioned by the financial crisis, adds to the stock of government debt outstanding, which accumulates or decreases over time according to the accounting identity (1). In journalistic discussions, most attention is focussed on the public sector Fiscal Balance (= $Taxes_t$ – Program $Expenditures_t$ – Interest (i.e. $r_t * D_{t-1}$)) and little distinction is made between the cost of interest payments on past debt and the cost of current program expenditures. But equation 2 implies that when growth rate is less than the interest rate and the Debt/GDP ratio is large, big increases in revenues and/or cuts to expenditures are necessary, to offset the compounding of past debt. The macro-economic implication of this additional fiscal drag is reduced GDP growth, thereby worsening the Debt/GDP ratio. And because international bond traders are highly aware of the mathematics of debt stability, their changing anxieties can produce sudden surges in the interest cost of refinancing the maturing debt from past periods.

In the U.S. the Federal Debt/GDP ratio increased from 34.6 % in 2001 to 86.5% in 2012, and is continuing to rise.[60] As long as interest rates on new debt are kept near zero, the cost of refinancing is minimized. However, equation (2) implies that any eventual increase in interest rates will have huge implications for budget balance. Under "Quantitative Easing", a significant fraction of the public debt of the U.S. has been purchased by the Federal Reserve – i.e. partly monetized. However, the question is: how long can ultra-low interest rates and monetization of the public debt (i.e. printing money) go on?[61]

The ripples of instability thus lead to unpleasant choices. Fiscal austerity may stabilize the public budget balance, at the cost of depressed growth, rising unemployment and social unrest. Deficit financing can be monetized, but with risks of inflation. A low interest rate monetary policy can maintain consumer demand and prop up the housing sector, but the longer it continues the greater is the indebtedness of households and the vulnerability of housing prices and household finances to interest rate increases. If and when inflationary pressures are combatted, monetary authorities will have to use the policy lever of an increase in interest rates (r_t) to reduce the rate of growth of aggregate demand and household incomes (g_t) – thus widening the differential ($r_t - g_t$) at both ends. Equation (2) tells us that when the Debt/Income ratio is large (as it now is – for both governments and households) a differential between the interest rate and the income growth rate ($r_t - g_t$) implies expenditure cuts will also have to be large, in order to create continuing current surpluses[62] big enough to prevent the debt/income ratio from compounding unsustainably.

---

[60] See Annex Table 33 General government net financial liabilities OECD Economic Outlook, Volume 2012 Issue 2 - No. 92 - OECD 2012.

[61] Influential economists (e.g. Mankiw, Rogoff, Krugman) have advocated higher inflation in the U.S., arguing that it assists deleveraging – see Miller (2009).

[62] If, for example, real interest rates on debt return to the 4% level and real growth is 2%, a debt/GDP ratio of 80% implies that stabilizing the debt/GDP ratio means taxes must exceed program spending by at least 1.6% of GDP (about $240 Billion in the US). Hence, the crucial issue in the stability of public finances in the US is whether, and by how much, interest rates return to a level greater than the growth rate (i.e. $r_t > g_t$).

In the public sector, large expenditure cuts to 'entitlement' programs could help balance the annual budget. However, cuts to the 'social wage' will accentuate the long term relative impoverishment of middle and lower quintiles of the income distribution, reduce further the slow growth of their real incomes and, as equation 2 shows, make household 'deleveraging' more difficult. If all sectors attempt simultaneously to deleverage, a recession must be expected, and even slower real income growth at the bottom will accentuate rising household income inequality and reinforce the imbalances of saving and consumption which initially helped create financial instability.

To summarize: ever increasing inequality of incomes over time cannot be a steady state. When income growth rates are unbalanced, one instability leads to another – and pressures intensify over time as the increasing income share of the top 1% implies their savings flows are an increasing fraction of GDP. Because financial and real flows are interdependent, and because flows accumulate to become stocks, an imbalance in income growth rates produces changing flows of consumption and savings, which compound into rising stocks of wealth at the top and greater stocks of indebtedness elsewhere. Financial fragility then produces financial crises, with big impacts on real economic activity. When governments respond with deficit spending, this accumulates as public debt, which itself becomes increasingly fragile, whenever interest rates exceed the growth rate. But if interest rates are kept low to stimulate consumer demand, households acquire levels of private debt that they will be unable to finance if/when interest rates return to historic levels.

4b Instability Implications of the Increasing Spending of the Top 1%

The process of increasing indebtedness of the middle class described above is more rapid if consumption norms are relative. Robert Frank (2005:139) has argued that greater inequality increases consumption by the middle class, by shifting up their consumption aspirations. When, for example, top earners build larger houses, they shift the frame of reference that defines what others slightly below them on the income scale consider an acceptable or desirable house, which in turn shifts the frame of reference for those just below them, and so on, all the way down[63]. The social visibility and positional nature of housing make it a good example of comparative consumption, and (as already noted) it is also a key sector for business cycle dynamics.

While the increasing savings of the top 1% may be largely invisible to the other 99%, their increasing consumption cannot be completely hidden – indeed, as Veblen (1912:Chapter 4) noted a century ago, conspicuous consumption is a large part of why some people want great wealth in the first place. But others often resent "if you've got it, flaunt it" lifestyles. So the socio-political question is whether increasing income gaps of the magnitude identified in Table 1 can be consistent with long run social stability[64].

---

[63] Frank was writing when the US housing price bubble was still inflating, and does not discuss the role that illusions of real estate wealth play in financing excess consumption.

[64] Social surveys such as the World Values Survey and International Social Survey Program have asked respondents for their evaluation of the level of inequality – but do not directly address increasing inequality. The size of income

In my view, a high but fairly constant level of inequality – e.g. medieval Europe – can enable the elite to develop strong norms of gracious living, and stability of income shares can provide the masses with the time necessary to become habituated to traditional differentials. Films and television dramas (e.g. "Downton Abbey") which now celebrate both the ostentatious consumption of the nobility and the faithful deference of their loyal retainers portray the sociological reality that these unequal ways of life can become part of definitions of self-identity. Viewed from a macro-economic perspective, the extravagant consumption of the gentry did serve to recycle income – and the fact that it was done in much the same way, year after year, meant that for both servants and served, great inequality had enough time to become viewed as the "natural order of things"[65].

However, the British servile tradition was built up over centuries, and our current reality is quite unlike such earlier periods of high but stable inequality. Unbalanced growth and *increasing* real income differentials at the top now create the problem of finding, every year, new ways in which to consume – i.e. the elite must be *increasingly* extravagant over time if their increasing incomes are to be recycled in consumption. At the very top, the sums are already significantly large – the World Top Incomes Data Base reports that in the US, the top 1/10th of 1% had an increase of average incomes of $505,000 in 2005, and $541,000 in 2006. Finding, year after year, new ways in which to consume an additional $500,000 or so is not a trivial task. Although top end incomes fell in the Great Recession, they have bounced back since 2010. Continuation of the growth rate of recent decades implies that the absolute size of annual increments to income at the top will continue to swell – indeed a 3.14% income growth rate implies that in 25 years they will be over twice as large as they are presently.

In the 21st century, unlike the 18th century, one can also expect that the advertising industry will increasingly market envy. When incomes at the top grow more rapidly than other incomes, the share of the top 1% in GDP increases, implying that the luxury goods market grows as a fraction of total spending. In the U.S. the top 1% share was 9.0% in 1977 and had risen to 22.5% in 2012. If the 1984-2011 differential between the income growth rates of the top 1% and everyone else continues, the income share of the top 1% in the U.S. will rise to 29.2% by 2017. The large and increasing size of the top end market is a powerful incentive for an ever increasing volume of aspirational advertising.

The necessities of life would be purchased even if they were not advertised at all – so the advertising of necessities is largely limited to conveying price information. But luxury goods are discretionary expenditures, which consumers have to be convinced to purchase, so they are necessarily advertising-intensive. Because the target market (i.e. the top 1%) already have essentially all imaginable normal creature comforts, advertisers have to appeal to ideas of exclusivity and status to motivate sales – and it is not in their interest to restrict their messaging just to those who could actually afford to buy.

---

differentials in the U.S., Canada and Australia is in uncharted territory, and increasing – hence surveys reporting past attitudes to past levels of inequality can only be somewhat informative.

[65] In England, acceptance of the social status quo was also assisted by the fact that landed gentry had the right to nominate the local Church of England pastor and often served as the local Justice of the Peace. A social deviant who rejected the established order could expect both the sanctions of the penal code in this life and eternal damnation in the hereafter. These reinforcements to deferential behaviour are no longer available.

Status goods (like expensive watches costing thousands of dollars) can only command a premium price if they are known to be status goods – there is no point to paying more for a fancy watch if nobody else is going to recognize it as "special". Hence, advertisers have to market luxury brand watches to those who cannot afford to buy as well as to those who can, in order for those who do buy to know that everyone else knows that this is a very expensive, very exclusive watch. And although some status goods can acquire their cachet by tradition and word of mouth, the expanding pool of disposable income among the affluent creates ever greater incentives to create new status goods using advertising. In such marketing campaigns, desire is created by the message that "everybody wants this, but only special people can have it" – i.e. by inspiring envy among those who do not possess the good, so that those who do buy it can have status and deference. Because the market value of luxury brands will depreciate without continued advertising to reinforce their message of exclusivity, privilege and wealth, mass media become increasingly saturated with their messaging.

Continually increasing incomes at the top end therefore imply a continuing shift in production towards advertising-intensive luxury goods and continually increasing incentives to advertising messages which tell the 99% what only the 1% have, and tell the 99.9% what only the top 0.1% can afford. As income differentials grow, the benchmarks of luxury will move ever further from the consumption norms of the median household – and the volume of luxury goods advertising will increase – thereby ensuring that the less affluent know increasingly more about the pleasures of the goods they cannot remotely afford. One consequence of increasing inequality in a market economy is, therefore, increasing incentives for advertising expenditures which increase envy. And as the daily bombardment of advertising messages increasingly tilts toward goods which most people cannot possibly afford, one has to wonder about the implications for human happiness.

To some extent, the top 1% of households can already consume their income within a separate world of gated resorts and exclusive neighbourhoods that most of the other 99% never experience. As the absolute size of income differences increases, it becomes increasingly difficult[66] for the top 1% to socialize across income classes, so the social contacts of the top 1% increasingly converge on their peers. As well, over time the increasing magnitude of top 1% consumer expenditures also builds an ever growing infrastructure of inequality (e.g. high end shops, 5 star hotels, luxury car dealerships) within which the economic elite can circulate without any interruption from the masses. As top end disposable income swells over future years, one can expect ever more entrepreneurial energy to be devoted to the design, production and marketing of such separate spheres of exclusivity. Hence, as top 1% incomes diverge increasingly from the median, they will become increasingly disconnected from any real contact with the lived reality of the 99%. However, what is the cost of all this to the 99%? Should they just try to ignore the advertising and think of the separate world of the elite as equivalent to the top 1% being self-exiled to reservations where they can be ignored (and perhaps taxed)?

[66] In large part because much social interaction is premised on reciprocity – as in "they had us over for dinner a month ago, so it's our turn to have them for dinner". Reciprocity is less feasible when income differentials widen.

Part of the problem raised by increasing inequality is that the top 1% do not want to be ignored – and they have the resources to intervene in the political process and to ensure that their opinions matter a great deal to others. In the U.S. there is clear evidence that[67]:

(a) the political and social preferences of the very affluent are quite different from those of the general population;

(b) the top 1% are much more active politically than the 99%;

(c) election campaigns depend heavily on major financial donors, who are overwhelmingly affluent individuals and

(d) legislative action is heavily influenced by the policy priorities of the very affluent.

The separate world of the top 1% therefore diminishes the democracy of the rest of society, to a degree which increases over time if election spending is unconstrained (as in the U.S. and Australia).

As well, one can expect top 1% parents to try to pass on their advantages to their children – which means purchasing as much influence over the social mobility process as they can. Part of this is an "income effect" - as top incomes increase, affluent parents can be expected to spend part of those increases on their children, via greater enrichment expenditures and further expansion and differentiation of the private schooling system.

As well, however, the rising "price" of <u>not</u> buying any available advantages for your children will also motivate many affluent parents. Over time, as the top end of the income distribution pulls further and further away from the median, the stakes involved in ensuring the success of one's children increase proportionately. It has always been true that those families already at the top can only lose from social mobility and as top-end incomes rise ever further, the stakes involved in preventing downward mobility of their children are ever-increasing. As a consequence, it becomes, for example, harder and harder for many affluent parents to even imagine placing their children in public school. And as a memories of a somewhat shared common childhood background (e.g. in the public school system) recede into stories about previous generations, it becomes ever harder to maintain the myth of rough equality of opportunity. Fundamentally, the greater is the success of the top 1% in ensuring the continued high socio-economic status of their own children, the greater is the corresponding blockage of the life chances for upward mobility of children from poorer households.

If income ratios are roughly constant, the associated levels of political spending, enrichment expenditures for elite children and advertising of luxury goods also do not change much over time – and habituation may well dull any tendency to discontent. But unbalanced growth implies increasingly large absolute income differences between income classes, increasingly large expenditures by the elite to influence the political process and to secure the advantages of their children and ever increasing advertising to remind everyone of the desirability and exclusivity of the luxury goods which most people

[67] See, for example, Page, Bartels, and Seawright (2013).

cannot afford. Is it likely that all such increases can continue indefinitely – that there exists no point at which some among the 99% would start to dissent?

5. Conclusion

Section 1 has argued that cross-country comparisons indicate (unsurprisingly) that more inequality of net income is a good predictor of more inequality of opportunity and less intergenerational social mobility. More inequality is also associated with fewer people reporting high levels of happiness or life-satisfaction. Whether or not more inequality of net income causes more ill-health, or more crime, or less trust and social capital is less clear – opinions depend partly on the rigour of proof demanded, the specific concept measured and the data set used. Nevertheless, it is clear from the diversity of levels of inequality within affluent OECD nations that different societies have made different choices about inequality – which implies that choices can be made about future inequality levels.

However, stability in the level of inequality requires equal rates of income growth, at all percentiles of the income distribution. If income growth is unbalanced – specifically, if the rate of growth of real incomes for the top 1% is significantly higher than the real income growth rate of everyone else – then more inequality over time is inescapable. Section 2 noted that in Australia, Canada and the U.S. such unbalanced growth has been the new normal for the past thirty years. If this differential in income growth rates continues, it will compound to a successively larger gaps between the top 1% and everyone else.

Equalizing the growth rates of market income requires either slowing of the growth rates of income at the top or substantial acceleration of income growth rates at the bottom (or both). Section 3 looked for a good reason to expect market forces to produce enough of either trend anytime soon, and could not find a plausible automatic mechanism of market auto-correction. Since a continuation of unequal growth rates implies ever growing market income differentials, Section 4 then examined the implications of the ever growing savings and spending of the top 1% for systemic stability. It concluded that unbalanced growth produces increasingly large tendencies to financial and real economic instability and increasingly large pressures on social stability – which will clearly interact in their implications.

Of course, even if the growth rates of pre-tax market income are unbalanced, the tax and transfer system could in principle balance the rates of growth of household income after taxes and transfers. More progressive income taxes and redistributive transfers could in principle be adjusted so as to equalize growth rates of income and stabilize the post-fisc income distribution. Since savings and spending decisions are made with respect to after tax income, the instability issues discussed in Section 4 would then be moot. Once the income distribution was stabilized, Australia, Canada and the U.S. would then face the problem of choosing <u>which</u> steady state level of inequality of consumption would maximize social welfare.

Assessing the probability that political economy will produce such an outcome is beyond the scope of the present paper. There are some hopeful historic precedents in Roosevelt's New Deal and the emergence of social democratic welfare states in Scandinavia in the 1930s. However, the social and

economic instability of the 1920s and 1930s also produced Fascism in Italy and Spain and Nazism in Germany. This paper concludes that more inequality – in the sense of more inequality over time – is an unsustainable long run trend, but it is not at all clear what economic and social instability will combine to produce in future years.

What could be bad about more inequality over time? The dark scenario is that increasing inequality causes increased economic instability and social stress, producing perceived threats to social order and provoking an authoritarian response. If the end result of greater economic and social instabilities caused by increasing inequality is an expansion of the surveillance state and the reduction of civil liberties, that could indeed be part of "what's so bad about more inequality".

In a less pessimistic scenario, democratic political economy rises to the challenge of first stabilizing the after tax income distribution (i.e. equalizing the growth rates of post-fisc income) and then, after considering the implications discussed in Section 1 of the level of income inequality for other aspects of life, moving to the socially preferred stable level of long-run inequality. However, before we get to choose which stable level of inequality we want, we first have to decide if we want to stop having more inequality, year after year.

.

References

Aaron, H.J., 1978. *Politics and the Professors*, Brookings Institution, Washington, D.C.

Agell, Jonas (1999) *On the Benefits from Rigid Labour Markets: Norms, Market Failures, and Social Insurance* The Economic Journal, Vol. 109, No. 453

Agell, Jonas & Lommerud, Kjell Erik, 1993. " *Egalitarianism and Growth,"* Scandinavian Journal of Economics, Wiley Blackwell, vol. 95(4), pages 559-79, December

Alvaredo, Facundo , Anthony B. Atkinson, Thomas Piketty, and Emmanuel Saez (2013) *The Top 1 Percent in International and Historical Perspective* Journal of Economic Perspectives—Volume 27, Number 3—Summer 2013—Pages 3–20 http://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.27.3.3

Amdekar, S.D., 2012. *Inequality, Surplus capital & Under-consumption: a contemporary analysis of J.A. Hobson's economic theory of new imperialism*. University College, University of Durham working paper.

Attanasio, O., Hurst, E., Pistaferri, L., 2012. *The evolution of income, consumption, and leisure inequality in the US, 1980-2010.* NBER Working Paper No. 17982**.**

Atkinson, A.B., Piketty, T., 2007. *Top Incomes Over the 20th Century: A Contrast Between Continental European and English-Speaking Countries,* Oxford U. Press.

Atkinson (1970) *"The Measurement of Inequality"* Journal of Economic Theory, Vol.2 Pp. 244-263, 1970

Baker, Dean (2006) *THE CONSERVATIVE NANNY STATE: How the Wealthy Use the Government to Stay Rich and Get Richer* http://deanbaker.net:8080/images/stories/documents/cnswebbook.pdf

Beaudry, P., and D. A. Green 2003. "Wages and Employment in the United States and Germany: What Explains the Differences?" *American Economic Review* 93 (3): 573-602.

Beaudry, P., and D. A. Green 2005. "Changes in US Wages, 1976–2000: Ongoing Skill Bias or Major Technological Change?" *Journalof Labor Economics* 23 (3): 609-48.

Becker, Gary and Nigel Tomes (1979) *"An Equilibrium Theory of the Distribution of Income and Intergenerational Mobility"* Journal of Political Economy December 1979, Pp. 1153-1189

Blau, F. and L.M. Kahn (2009) *Inequality and Earnings Distribution*. Chapter 8, Pp. 177-203 *in The Oxford Handbook of Economic Inequality,* edited by Wiemer Salverda, Brian Nolan, and Tim Smeeding, Oxford University Press, Oxford, 2009

Bowles S. & H. Gintis (1976) Schooling in Capitalist America: Educational Reform and the Contradictions of Economic Life, Basic Books, New York, 1976

Bowlus, Audra J. and Jean-Marc Robin, *"An International Comparison of Equalization Mobility and Lifetime Earnings Inequality: How Continental Europe Resembles North America*," Journal of the European Economic Association, forthcoming.

Brunori, Paolo Francisco H. G. Ferreira, Vito Peragine (2013) *Inequality of Opportunity, Income Inequality and Economic Mobility: Some International Comparisons* World Bank Policy Research Working Paper 6304 and IZA DP No. 7155 January 2013 http://ftp.iza.org/dp7155.pdf

Burkhauser, Richard V., Feng, S., Jenkins, S.P., Larrimore, J., (2009). *Recent trends in top income shares in the USA: reconciling estimates from March CPS and IRS tax return data*. NBER Working Paper No. 15320.

Burtless, Gary (2009) "*Demographic Transformation and Economic Inequality*" Chapter 18, Pp. 435-454 *in The Oxford Handbook of Economic Inequality,* edited by Wiemer Salverda, Brian Nolan, and Tim Smeeding, Oxford University Press, Oxford, 2009

Corak, Miles (2004) *Generational Income Mobility in North America and Europe: An Introduction* Chapter 1 in Corak, M., ed. (2004). *Generational Income Mobility in North America and Europe.* Cambridge, United Kingdom, Cambridge University Press. 2004

Corak, Miles (2012) *Three rules for good pundit behaviour, or if you like: how to obstruct the debate on inequality in three easy steps* December 16, 2012
http://milescorak.com/2012/12/16/three-rules-for-good-pundit-behaviour-or-if-you-like-how-to-obstruct-the-debate-on-inequality-in-three-easy-steps/

Corak, Miles (2013) *Income Inequality, Equality of Opportunity,and Intergenerational Mobility* Journal of Economic Perspectives—Volume 27, Number 3—Summer 2013—Pages 79–102 http://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.27.3.79

Coyne, Andrew (2013) *"The myth of income inequality: Since the bleak 90s, things have actually gotten better"* The National Post September 2, 2013

Davies, James B. (2009) "Wealth and Economic Inequality" Chapter 6 Pages 127-149 in *The Oxford Handbook of Economic Inequality,* edited by Wiemer Salverda, Brian Nolan, and Tim Smeeding, Oxford University Press, Oxford, 2009

Davies, James B. , Susanna Sandstrom, Anthony Shorrocks and Ed Wolff, (2008) "*The Level and Distribution of Global Household Wealth*" April 2008; Available at http://www.ssc.uwo.ca/economics/faculty/Davies/workingpapers/thelevelanddistribution.pdf

De Tocqueville, Alexis (1956) *Democracy in America* Vol. 1, A.A. Knopf, New York, 1956

Devaro, Jed (2006) *Strategic Promotion Tournaments and Worker Performance* Strategic Management Journal, Vol. 27, No. 8 (Aug., 2006), pp. 721-740

Doeringer, P. B. & M.J. Piore (1971), Internal Labor Markets and Manpower Analysis, D. C. Heath and Co., Lexington, Mass. 1971.

Dynan, K.E., J. Skinner, S.P. Zelkes (2004) *Do the Rich Save More? Journal of Political Economy*, 112 (2) 397-442

Fortin, Nicole, David A. Green, Thomas Lemieux, Kevin Milligan, and W. Craig Riddell (2012) *Canadian Inequality: Recent Developments and Policy Options* Pages 121-145 Canadian Public Policy, vol. xxxviii, no. 2 2012

Frenette, M., Green, D.A., Milligan, K., 2007. *The tale of the tails: Canadian income inequality in the 1980s and 1990s*. Canadian Journal of Economics 40(3), 734-764.

Frydman, C., Jenter, D., 2010. *CEO Compensation* NBER Working Paper 16585.http://www.nber.org/papers/w16585.

Gabaix X, and Landier A (2006, 2008) *"Why Has CEO Pay Increased So Much?"* NBER Working Paper No. 12365 July 2006 and *Quarterly Journal of Economics*, (2008)

Gordon, D. , R. Edwards, M. Reich (1982), Segmented Workers, Divided Workers, Cambridge University Press, 1982.

Gordon, Robert J., Dew-Becker, I., 2008. Controversies about the Rise of American Inequality: a survey. NBER Working Paper No. 13982.

Greenville, J., Pobke, C. and Rogers, N. 2013, *Trends in the Distribution of Income in Australia*, Productivity Commission Staff Working Paper, Canberra.

Hobson, J.A., 1900. *The Economics of Distribution*. Macmillan, New York.

Hobson, J.A., 1902, 1905. *Imperialism: A Study.* George Allen & Unwin Ltd., London.

Hou, Feng and John Myles (2007) *The Changing Role of Education in the Marriage Market: Assortative Marriage in Canada and the United States Since the 1970s* Statistics Canada, Analytical Studies Branch Research Paper Series 11F0019MIE – No. 299
http://www.statcan.gc.ca/pub/11f0019m/11f0019m2007299-eng.pdf

Jenkins, Stephen (1991). *"The Measurement of Income Inequality."* Chapter 1 in L. Osberg, ed (1991) Economic Inequality and Poverty: International Perspectives (M.E. Sharpe, 1991).

Jenkins, Stephen and Phillippe van Kerm (2009) *"The Measurement of Economic Inequality."* Chapter 3, Pages 40-70 in The Oxford Handbook of Economic Inequality, edited by Wiemer Salverda, Brian Nolan, and Tim Smeeding, Oxford University Press, Oxford, 2009

Kaplan, Steven N. and Joshua Rauh (2013) *It's the Market: The Broad-Based Rise in the Return to Top Talent* Journal of Economic Perspectives—Volume 27, Number 3—Summer 2013—Pages *57–78*

Knight, F.H., 1951. *The role of principles in economics and politics*. American Economic Review, March, pp. 1-29.

Krueger, D., Perri, F., 2006. *Does Income Inequality Lead to Consumption Inequality? Evidence and Theory*. Review of Economic Studies 73(1), 163-193.

Kumhof, M., Rancière, R., 2010*. Inequality, Leverage and Crises*. IMF Working Paper, Research Department, International Monetary Fund.

Kumhof, M., et al. 2012. *Income Inequality and Current Account Imbalances*. IMF Working Paper, Research Department, International Monetary Fund.

Leamer, E.E., 2007. *Housing IS the business cycle*. NBER Working Paper 13428. http://www.nber.org/papers/w13428.

Leigh, Andrew, Christopher Jencks and Tim Smeeding (2009) *"Health and Economic Inequality"* Chapter 16, Pp. 384-405 in The Oxford Handbook of Economic Inequality, edited by Wiemer Salverda, Brian Nolan, and Tim Smeeding, Oxford University Press, Oxford, 2009

Leigh, Andrew (2013) Battlers and Billionaires: The Story of Inequality in Australia Redback, Collingwood, VIC, Australia

Lu Yuqian, Rene´ Morissette and Tammy Schirle (2011) "THE GROWTH OF FAMILY EARNINGS INEQUALITY IN CANADA, 1980–2005" *Review of Income and Wealth* Series 57, Number 1, March 2011

Lydall, H.F. (1959) *The Distribution of Employment Incomes* Econometrica Vol 27 (1959) Pp.110-115

Lydall, H.F. (1968) *The Structure of Earnings* Oxford University Press, Oxford.

Mankiw, N. Gregory *(2013) Defending the One Percent* Journal of Economic Perspectives—Volume 27, Number 3—Summer 2013 *Pages 21–34*

Marshall, Alfred (1913) *Principles of Economics* 8th Edition New York, MacMillan and Co. 1913

Marx, K., 1894. *Capital – Volume 3*. International Publishers 1967 edition, New York.

Milanovic, B., 2009. *Income inequality and speculative investment by the rich and poor in America led to the financial meltdown*.YaleGlobal, 4 May. http://yaleglobal.yale.edu/content/two-views-global-crisis.

Milanovic, Branko (2013) *The Inequality Possibility Frontier: Extensions and New Applications*

The World Bank, Development Research Group Policy Research Working Paper 6449 May 2013

http://elibrary.worldbank.org/docserver/download/6449.pdf?expires=1376080493&id=id&accname=guest&checksum=6A2BEC48F136448773C674817C646C72

Milanovic, Branko, Peter H. Lindert and Jeffrey G. Williamson (2010) *Pre-Industrial Inequality* The Economic Journal, 121 (March 2010), 255–272

Murphy, Brian, Paul Roberts and Michael Wolfson (2007) "High-income Canadians"*Perspectives on Labour and Income* – September 2007 Pages 5 to 17 Statistics Canada Cat No. 75-001-XIE http://www.statcan.gc.ca/pub/75-001-x/75-001-x2007109-eng.pdf

Murphy, Brian, Sylvie Michaud and Michael Wolfson (2008) Income Trajectories of High Income Canadians 1982-2005 Statistics Canada IARIW 30th General Conference Portoroz, Slovenia, August 24-30, 2008 http://www.iariw.org/papers/2008/murphy2.pdf

Organisation for Economic Co-operation and Development (2011) Divided We Stand: Why Inequality Keeps Rising Paris : OECD, 2011. http://www.oecd.org/document/51/0,3746,en_2649_33933_49147827_1_1_1_1,00.html

Osberg, Lars (1981) Economic Inequality in Canada, Butterworths, Toronto 1981, 236 pages

Osberg, L., L. Mazany, R. Apostle and D. Clairmont (1986) "Job Mobility, Wage Determination and Market Segmentation in the Presence of Sample Selectivity Bias," Canadian Journal of Economics, May 1986, Vol. XIX, No. 2, pp. 319-346

Osberg, Lars (2003) The Economic Implications of Social Cohesion (edited) University of Toronto Press, Toronto, 2003, 249 pages

Osberg, Lars and Tim Smeeding, (2006) "*Fair" Inequality? Attitudes to Pay Differentials: The United States in Comparative Perspective*" American Sociological Review, Vol. 71 (450–473) June 2006 Available at http://myweb.dal/osberg/

Osberg, Lars (2008) *A Quarter Century of Economic Inequality in Canada 1981 – 2006*, Canadian Centre for Policy Alternatives, April 2008 http://www.policyalternatives.ca/documents/National_Office_Pubs/2008/Quarter_Century_of_Inequality.pdf

Osberg, Lars (2010) Everything You Always Wanted To Know About Economic Inequality But Did Not Know Where To Look To Find review article *The Oxford Handbook of Economic Inequality*, edited by Wiemer Salverda, Brian Nolan, and Tim Smeeding (Oxford University Press, Oxford, 2009) *Review of Income and Wealth* Series 56, Number 2, June 2010 Pp 424 - 430

Osberg, Lars (2013) *Instability Implications of Increasing Inequality: Evidence from North America* Economic Modelling (forthcoming) Available at http://myweb.dal/osberg/

Page, Benjamin I. Larry M. Bartels, and Jason Seawright (2013) *Democracy and the Policy Preferences of Wealthy Americans* Perspectives on Politics March 2013 Vol. 11/No. 1 pages 51-73

Peach, Richard, Robert Rich, and Anna Cororaton (2011) *How Does Slack Influence Inflation?* CURRENT ISSUES IN ECONOMICS AND FINANCE, Volume 17, Number 3 Federal Reserve Bank of New York Pp. 1-7

Piketty, Thomas, Emmanuel Saez, and Irina Stantcheva (2011) 'Optimal taxation of top labor incomes: a tale of three elasticities,' NBER Working Paper No. 17616

Ricardo, David (1831) *The Principles of Political Economy and Taxation* New York, Dent, Everyman's Library 1969

Rosen, Sherwin (1981) *The Economics of Superstars* American Economic Review Vol 71, No. 5 pp. 845-858

Striking it Richer:

Saez, Emmanuel (2013) *The Evolution of Top Incomes in the United States (Updated with 2012 preliminary estimates)* UC Berkeley September 3, 2013
http://elsa.berkeley.edu/~saez/saez-UStopincomes-2012.pdf

Salverda, Wiemer, Brian Nolan and Tim Smeeding (2009) (Editors) *The Oxford Handbook of Economic Inequality* Oxford University Press, Oxford 2009

Saunders, Peter (2010) Beware False Prophets: Equality, the Good Society and *The Spirit Level* edited by Natalie Evans, Policy Exchange, London 2010

Sawyer, M, 1976, "Income Distribution in OECD Countries", *OECD Economic Outlook, Occasional Studies*, Paris, OECD.

Stevenson, Betsey and Justin Wolfers, 2008. "Economic Growth and Subjective Well-Being: Reassessing the Easterlin Paradox," Brookings Papers on Economic Activity, Economic Studies Program, The Brookings Institution, vol. 39(1 (Spring), pages 1-102.

Stevenson, Betsey and Justin Wolfers, (2013) SUBJECTIVE WELL-BEING AND INCOME: IS THERE ANY EVIDENCE OF SATIATION? Working Paper 18992 http://www.nber.org/papers/w18992 NATIONAL BUREAU OF ECONOMIC RESEARCH

Stiglitz, Joseph E. (2012) *The Price of Inequality: How Today's Divided Society Endangers Our Future* W.W. Norton and Co, New York, 2012

UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE (2011) *Canberra Group Handbook on Household Income Statistics* Second Edition 2011 UNITED NATIONS Geneva, 2011
http://www.unece.org/fileadmin/DAM/stats/groups/cgh/Canbera_Handbook_2011_WEB.pdf

Veall, Mike (2012) *"Top Income Shares in Canada: recent trends and policy implications"* Canadian Journal of Economics, November 2012 pp. 1247-1272.

Veblen, Thorstein (1912) *The Theory of the Leisure Class* Mentor Book reprint, 1953, New York

Western, Bruce and Jake Rosenfeld (2011) *Unions, Norms, and the Rise in U.S. Wage Inequality* American Sociological Review 2011 76: 513

Wilkinson, Richard and Kate Pickett (2010) *The Spirit Level: Why Equality is Better for Everyone* Penguin Books

Wilkinson, Richard and Kate Pickett (2006) *Income inequality and population health: a review and explanation of the evidence.* Social Science and Medicine. 2006 Apr ;62(7):1768-84. Epub 2005 Oct 13

Wolfe B. and R. Haveman (2001) *ACCOUNTING FOR THE SOCIAL AND NON-MARKET BENEFITS OF EDUCATION* Pages 221-250 in John Helliwell (editor) The Contribution of Human and Social Capital to Sustained Economic Growth and Well Being, International Symposium Report, Organization for Economic Co-operation and Development and Human Resource Development Canada, Paris and Ottawa, 2001

Wolff, Edward N. (2011) *The Transformation of the American Pension System* W.E. Upjohn Institute for Employment Research, Kalamazoo, Michigan

Yalnizyan, Armine (2007) *The Rich and the Rest of Us* Canadian Centre for Policy Alternatives, Ottawa, March 2007

Yalnizyan, Armine (2010) *The Rise of Canada's Richest 1%* Canadian Centre for Policy Alternatives, Ottawa, December 2010

.