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INSTABILITY IMPLICATIONS OF INCREASING INEQUALITY

What can be learned from North America?

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Abstract

WHAT CAN BE LEARNED FROM THE DIVERGING INEQUALITY TRENDS OF CANADA, THE U.S. AND MEXICO?

Increasing inequality cannot be a long-run steady state — i.e. a trend that can continue indefinitely. Furthermore, the very different rates of growth of market income among the bottom 99% and top 1% in the U.S. and Canada since the 1980s necessarily change consumption and savings flows. Although aggregate demand can be maintained as long as the added savings of the increasingly affluent are loaned to enable the consumption of those with stagnant incomes, increasing indebtedness implies financial fragility, periodic financial crises, greater volatility of aggregate income and, as governments respond to mass unemployment with counter-cyclical fiscal policies, a compounding instability of public finances. In Canada and the United States, *increasing economic instability* is thus a necessary implication of *increasing inequality*.

Mexico, like many other middle-income nations, is a very different case. In much the same way as Canada and the U.S. experienced the structural shifts of economic development from 1940 to 1975, in Mexico rural out-migration, expansion of primary and secondary enrolment, increased female employment and declining birth rates have, since the mid 1990s, had major impacts on the incomes of lower and middle segments of the income distribution. Together with the establishment of a large social transfer program, these shifts helped Mexico reduce inequality (albeit from a high level) in recent years.

Stability in market income shares and macro-economic flows requires equalization of income growth rates — either an acceleration of the income growth rate of

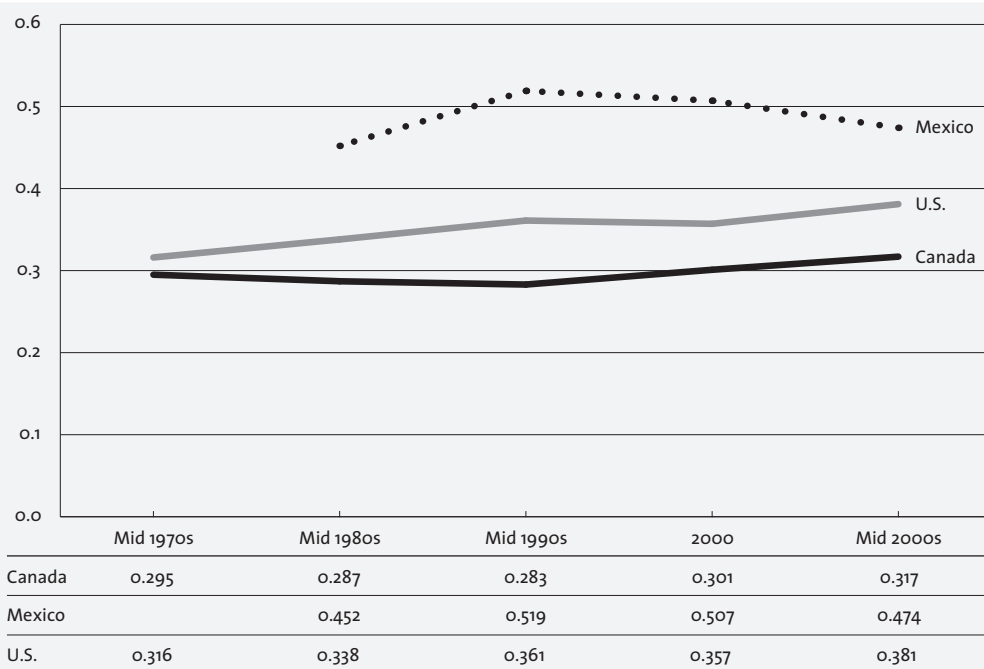
the bottom 99%, or a decline in income growth of the top 1% would do. There is no evidence that purely economic forces will produce either outcome anytime soon in Canada or the U.S. — so any return to stability depends on political economy. In the 1930s, the U.S. political system was, under Roosevelt, able to produce the tax/transfer decisions and institutional innovations necessary to stabilize the growth process for almost 50 years — but a renewal of that success is very uncertain.

Instability Implications of Increasing Inequality: What Can Be Learned From North America?

WHEN ECONOMIC INEQUALITY is roughly constant, it does not make much news and there are not many conferences about it. During a period of stability — for example, during the quarter century after 1950 in Canada and the United States — the relatively few academics who somehow develop an interest in income distribution may hear the subject denigrated as being “about as interesting as watching grass grow¹” and they can struggle to find anyone else who is interested. However, such stability is not characteristic of our current times — and the current conference is itself evidence of the concerns that creates.

This paper focuses on the implications of inequality trends in the U.S., Canada and Mexico over the last thirty years. It starts from the perspective that it is *increasing* economic inequality, and its implications, which primarily concerns us — partly because we know that although some countries (like the U.S.) have experienced several recent decades of rising inequality, continually increasing inequality cannot be a steady state. Indices of economic inequality, like the Gini ratio, belong to the class of economic statistics² for which there are inherent upper bounds — they cannot increase without limit. So where is rising inequality taking us? Does the income distribution eventually stabilize at some higher steady state level of inequality? If so, how exactly might stability emerge and what sort

FIGURE 1 Inequality of Equivalent After-tax Money Income, Gini Index



Source: Growing Unequal? Income Distribution and Poverty in OECD Countries OECD 2008³

of society might that be? Or is it more accurate to think of increasing economic inequality as indicative of a fundamental instability of market economies? If so, how can such instability be mitigated?

Canada, the United States and Mexico exemplify very different positions in the hierarchy of global capitalism and have long histories of interdependency, which have deepened since the North American Free Trade Area (NAFTA) came into force in 1994. Nevertheless, their recent experiences of inequality have evolved along different trajectories. Specifically, the level and trend of income inequality within each country in recent decades has not been at all the same. As Figure 1 illustrates, income inequality (as summarized by the Gini index of inequality of equivalent income, after taxes and transfers) declined marginally in Canada from the mid 1970s until the mid 1990s, and then increased fairly sharply over the next decade — while in Mexico, starting from a much higher level, inequality rose until the mid-1990s, but fell thereafter. Although it has significantly less inequality than Mexico, the United States has always had more inequality than other affluent OECD nations, including Canada, and recently it has had a more unambiguous trend to greater inequality over time.

The literature on economic inequality has, for many years, emphasized how different summary indices of inequality (e.g. the Gini or Theil indices or percentile share measures) or different measures of control over economic resources (e.g. consump-

TABLE 1 Illustrative Statistics — 2009

	CANADA	MEXICO	U.S.
Population (millions)	33.7	107.4	307.0
GDP (Billion current U.S.\$)	1,336	883	14,044
GDP per capita, PPP (constant 2005 international \$)	34,600	12,500	41,700
Life expectancy at birth, total (years)	81.2	75.3	78.7
Crude Birth Rate Change (1980 to 2009)	-3.9	-15.8	-2.1
Agriculture (% of total employment)	2.5	13.5	1.4

Source: <http://data.worldbank.org/data-catalog/world-development-indicators>

tion or income or wealth) can sometimes generate different perceptions of inequality trends. In recent years, many fine papers have been written documenting trends in inequality using summary indices (e.g. Heathcote et al (2009); Panoussi et al (2011) and discussing different aspects of inequality trends (e.g. Autour et al (2008)). However, changes in any summary index, like the Gini, cannot reveal which part of the distribution of income has been changing. And the main problem of a survey paper such as this is to decide which aspect of changing inequality is the main event.

This paper emphasizes the implications of trends in top end incomes in the U.S. and Canada — specifically, the top 1%. In focusing on the very top end, this paper concurs with Gordon (2009) and Burkhauser *et al.* (2009) who find that essentially all of the increase of inequality after 1993 in the U.S. occurred in the top 1 percent group, and there was nil increase of inequality in the bottom 99 percent of the population. Osberg (2008) had earlier come to a similar conclusion in Canada⁴.

As is well-known, Canada, Mexico and the United States are countries of very different size, income level and socio-demographic structure — Table 1 provides a few summary comparative statistics — so the context of income inequality differs substantially across these three countries. Furthermore, this paper adopts a slightly different perspective from much of the literature in focusing on the implications of *increasing* inequality — i.e. changes over time. In this respect, it diverges from the approach of the many authors (e.g. Wilkinson and Pickett: 2009) who have compared societies with different *levels* of inequality. A necessary and sufficient condition for increasing cross-sectional inequality is differential rate of growth of real incomes at different points in the income distribution. Hence, this paper emphasizes the very different *rates of growth* of income among the bottom 99% and top 1% in the U.S. and Canada. Many interesting papers have discussed *why* this might be happening but this paper does not have the space to do this debate justice, and focuses instead mainly on *implications*.

Section 1 begins with a brief overview of trends in measured income inequality, emphasizing especially Canada and the U.S.⁵ Section 2 stresses the ‘general disequilibrium’ instability implications of increasing inequality while Section 3 con-

siders the likelihood of stabilizing political economy responses. Section 4 is a kind of conclusion.

1. RECENT TRENDS IN INEQUALITY

Over the last thirty years, there have been huge changes in American and Canadian labour markets. The labour force has become older and much better educated and has been reallocated across industries and regions. Cohorts of new immigrants have arrived. Compared to 1980, Canadians and Americans now work with many new technologies and considerably more capital, in a much more deregulated labour market, with much less protection by unions and tariff barriers. Implicit guarantees of continuing employment have withered away for many workers and contingent work, on-call arrangements and sub-contracting arrangements have proliferated. However, even with all these structural changes, how much has the distribution of real hourly wages actually changed?

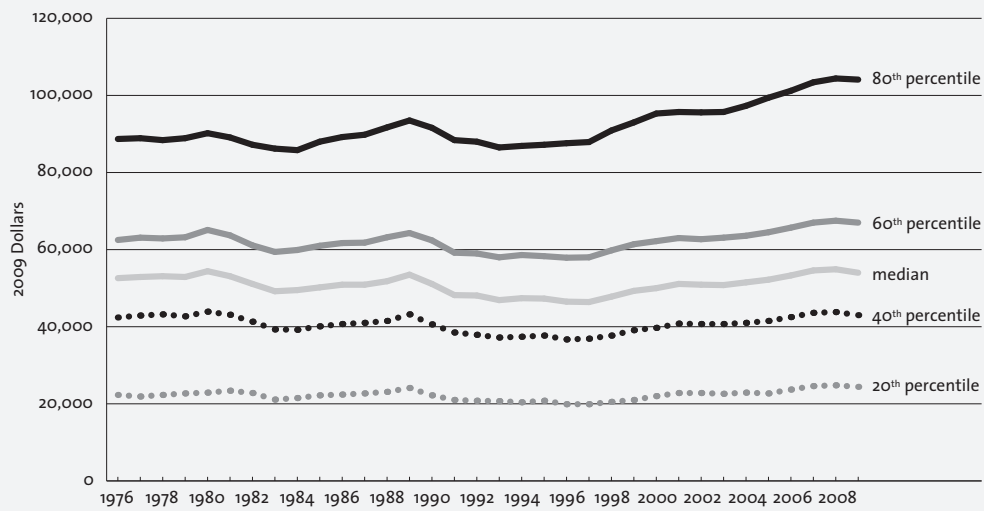
In Canada, Morrissette and Johnson (2005:42) present a striking graphic, reproduced in Appendix 1, to show that for most of the Canadian wage distribution, the remarkable fact is how little change there has been — after inflation. In the U.S., Kumhof and Rancière (2010:27) present a much longer time span of evidence on male hourly real wages which illustrates the essential constancy of median hourly real wages in the U.S. over the last thirty years. As illustrated in Appendix 1, moderately sized declines in real hourly wages at the very bottom and increases among the top 10% have bracketed the much smaller changes of intermediate deciles.

Of course, the total disposable annual money income of households also depends on the hours of labour supply of individual household members, the correlation of annual earnings among household members, income from capital and the net impact of taxes minus transfer payments. Compared to thirty years ago, Canadian households now supply significantly more weeks of work to the paid labour market (particularly at the lower end) and their increase in education levels (particularly female) has been accompanied by a marginal increase in spousal correlation of earnings. However, these micro trends have been largely offsetting⁶.

Figure 1 plotted the Gini index of after tax equivalent income of individuals over time but to get an idea of which part of the income distribution is changing, Figure 2 shows the total real income of Canadian households at specific points in the income distribution — specifically the 20th, 40th, 50th, 60th and 80th percentiles. Over the span of available data, a 33 year period, only the 80th percentile has noticeably increased in real income, at all⁷. There has been remarkably little change at most points in the distribution of real pre-tax household money income⁸.

Available U.S. data goes back further, and is less shy about revealing the incomes of the top 5%, but Figure 3 paints a broadly similar picture of long-run U.S. trends. The constancy of the real incomes of the bottom percentiles of the income distribu-

FIGURE 2 Total Income of Canadian Family Units: 1976–2009



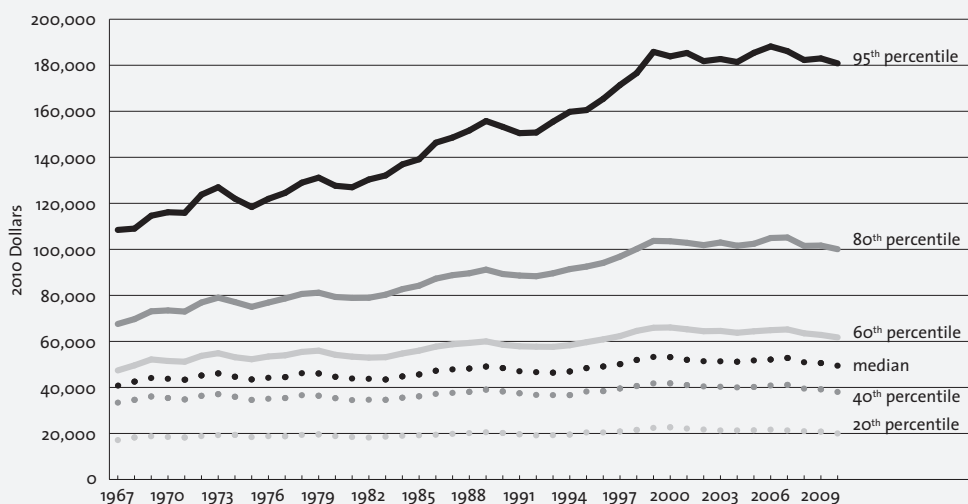
Source: CANSIM, v25731821, v25731822, v25739992, v25731823, v25731824; Tables 2020405 and 2020411

tion, over long periods of time, is really quite remarkable. Expressed in 2010 CPI-U-RS adjusted dollars, the 20th percentile of the U.S. household income distribution received \$20,000 in 2010 compared to \$20,215 in 1990 and \$19,593 in 1979. The 40th percentile income got \$38,043 in 2010 and \$38,226 in 1990 (\$36,386 in 1979). Median household income in the U.S. has barely budged since 1990 (an increase of about 2%, from \$48,423 to \$49,445 and the 60th percentile income rose only marginally more than the median from 1990 to 2010 (\$58,542 to \$61,735).

In the U.S., there was a bit more movement of real incomes at the 80th percentile and above. An important difference in inequality trends within Canada and the U.S. is the greater widening of the college/high school earnings differential in the U.S., contrasted with a much smaller increase in the differential in Canada.⁹ Many papers have also examined other issues — e.g. changing patterns of assortative mating and gender educational attainment (e.g. Hou and Myles, 2007) — but their common finding is a relatively small percentage change, for most of the distribution. It is only as one gets towards the top that one sees really sizeable increases in income over time — e.g. the 95th percentile income in the U.S. rose as high as \$188,175 in 2006 and, even with a drop to \$180,810 in 2010, was still up by 18% over the 20 year period.

Figures 2 and 3 are based on household survey based measures of income distribution which face great difficulties in tracking trends in the tails of the income distribution¹⁰. In Canada, Frenette, Green and Milligan (2007) have used Census data, while Murphy, Roberts and Wolfson (2007), Murphy, Michaud and Wolfson (2008) and Veall (2010) have relied on income tax records to make the same point — that the very top end tail is where Canada’s income distribution has changed most dra-

FIGURE 3 Total Income of US Households 1967–2010



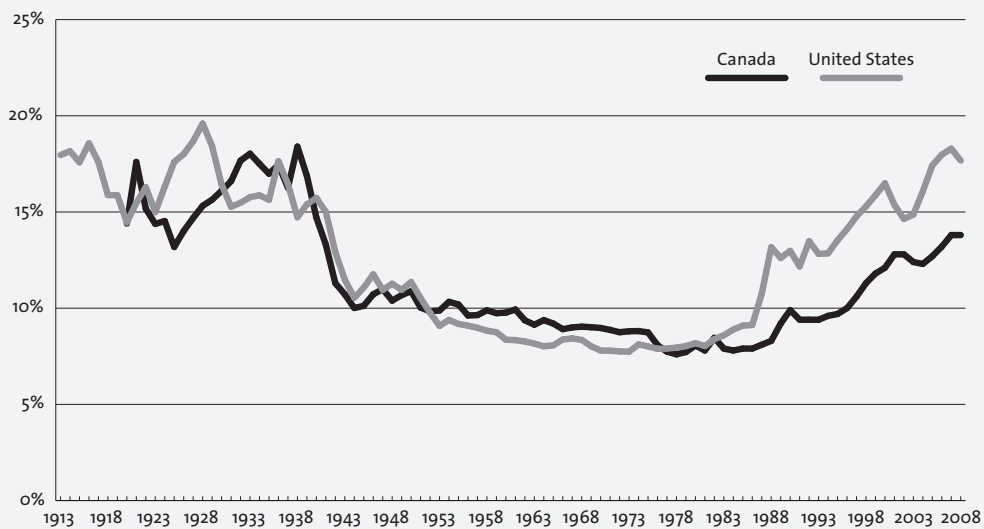
Source: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplements. Table H-1. Income Limits for Each Fifth and Top 5 Percent of All Households: 1967 to 2010

matically. Gordon (2009) and Burkhauser et al (2009) are among those who have come to the same conclusion with U.S. data.

Figure 4 combines data from the World Top Incomes Database and from Veall (2010) (which updates Saez and Veall, 2007). It documents how top end income shares in Canada have followed¹¹, with a slight lag, the same trend as in the U.S.. As Piketty and Saez (2003) have shown, the top 1% income share in the U.S. follows a U shaped trend, with a sharp upward trajectory since about 1983. In both the U.S. and Canada, the farther up the income distribution one cares to count, the larger the percentage increase in recent years — large percentage increases which have been applied to a large absolute income base. By 2008, if capital gains are excluded, the top 1% in the U.S. received about 18% of pre-tax income. In Canada, the income share of the top one percent fluctuated a bit around the 15% to 17% range in the 1920s and 1930s, but dropped during World War II to the 10% range, followed by a thirty year period of much more gradual decline to a minimum of 7.5% in the late 1970s. The period since 1987 in Canada has been one of rapidly rising income share, interrupted only briefly by recessions (at roughly ten year intervals)¹². With roughly 13% of total income in 2007, the top 1% of Canadians were on track to regain their income share of the early 20th century, until interrupted by the recent recession.

However, one should not interpret Figure 4 as evidence of income loss by North America’s elite during the 1930s and 1940s. Figure 5 presents the data on top incomes in real dollars¹³, to make the point that the income *level* of the top 1%, in both Canada and the U.S., did not fall after 1940 — rather it remained roughly constant in the 1950s and grew slowly in the 1960s and early 1970s¹⁴. The income *share* of the top 1% fell after the late 1930s because the incomes of the rest of the distribution rose faster.

FIGURE 4 Top 1% Income Share: U.S. & Canada



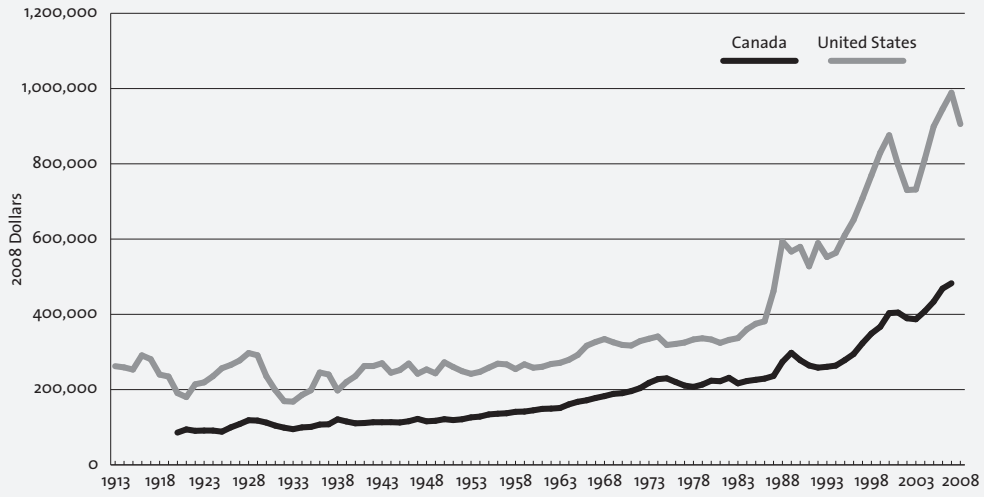
Source: Veall (2010-12-12; page 9, Figure 1) and World Top Incomes Database
<http://g-mond.parisschoolofeconomics.eu/topincomes/>

The rich were not worse off in an absolute sense, but everyone else's incomes grew more rapidly than theirs. However, since 1984 in the U.S. and since 1987 in Canada, there has been a rapid rise in the real incomes of the top 1% — at a time when the income levels of the rest of the distribution stagnated.

Figure 6 combines the two different types of data — on taxpayers from the tax files and on households from surveys — into a common comparison of growth rates over the 20 years preceding the Great Recession of 2008. It has a succinct summary — in both the U.S. and Canada, recent decades have seen very little growth of real incomes throughout most of the income distribution, but dramatically compounding income gains for the top end, particularly the top percentile and above. One way of thinking about this is to say that most of the income gains of macro-economic growth have been received by the top few percentiles of the income distribution. Alternatively, another way of summarizing the same data is to note that macro-economic reports of per capita income growth in the U.S. and Canada have been a misleading average of the very rapid growth of the incomes of the top 1% and the relative stagnancy of the incomes of the rest of the distribution.

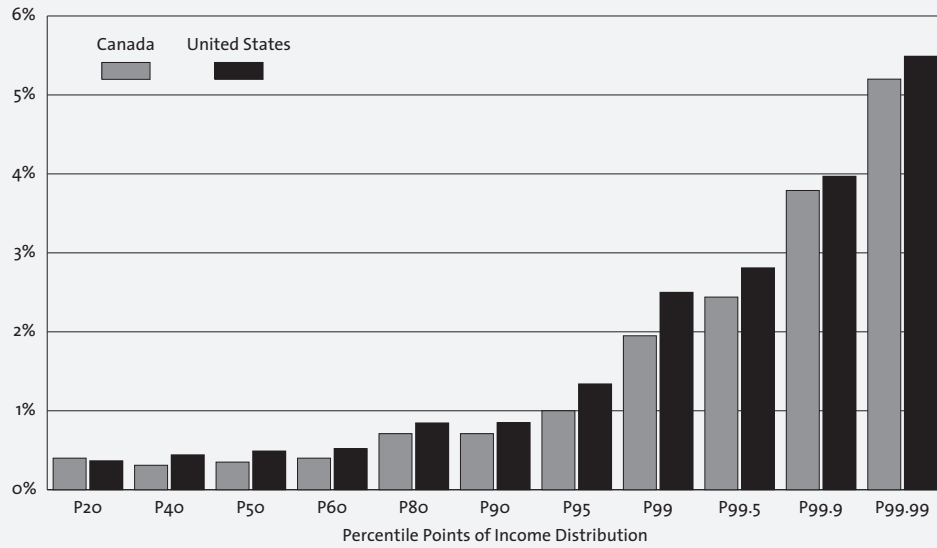
Although Figures 4, 5 and 6 present the same data, they convey a different visual impression of what the issue is with respect to long run trends. Because Figure 4 portrays the decline and rise of the income *share* of the top 1%, they can perhaps leave the impression that the income share of the top 1% in 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% in Canada and the U.S. from the late 1930s to the mid 1970s was not due to

FIGURE 5 Average Real Income of Top 1% U.S. and Canada



Source: The World Top Incomes Database <http://g-mond.parisschoolofeconomics.eu/topincomes/> accessed September 9, 2011 + Veall, (2010)

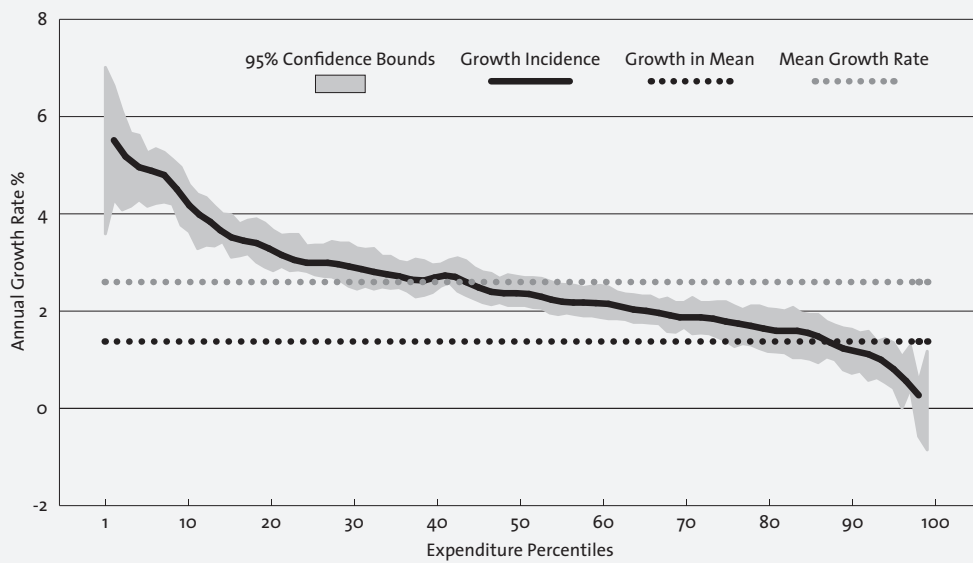
FIGURE 6 Real Income: Compound Annual Growth Rate 1987–2007



	P20	P40	P50	P60	P80	P90	P95	P99	P99.5	P99.9	P99.99
Canada	0.40	0.31	0.35	0.40	0.71	0.71	1.00	1.95	2.44	3.79	5.20
U.S.	0.37	0.44	0.49	0.52	0.85	0.85	1.34	2.50	2.81	3.97	5.49

Sources: CANSIM, v25731821, v25731822, v25739992, v25731823, v25731824; The World Top Incomes Database <http://g-mond.parisschoolofeconomics.eu/topincomes/>; U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplements. Tables H-1 and H-6; Veall (2010)

FIGURE 7 Growth Incidence in Mexico



Source: Esquivel (2008:16)

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. Increasing top end shares of total income since the early 1980s have been driven by a reversal of these relative growth rates of income.

But Mexico is a different story. Significant rural-urban migration, rapid increases in the percentage of high school graduates and a huge demographic bulge all combined in the late 1990s and early 2000s to produce relatively rapid increases in the earnings of the lower and middle quintiles of the distribution, reducing the skilled/unskilled differential and thereby equalizing the over-all distribution. As well, as Esquivel (2008) notes, since 1997 transfer payments under the *Progresa/Oportunidades* program have been of increasing importance, reaching 15% of the population by 2006, with a strongly progressive policy design.

Figure 7 is taken from Esquivel (2008:16) and shows how the combined impact of market and state meant that between 2000 and 2006, the growth incidence curve for Mexico was tilted strongly towards larger percentage increases for the lower deciles of the distribution. Esquivel concludes (2008:35) hopefully that: “Mexico is now beginning to experience the inequality reducing effects of having a more educated workforce and of trading with more skill abundant countries.”

2. ECONOMIC IMPLICATIONS?

2.1 Micro

Rising levels of economic inequality, in both Canada and the United States, have a resemblance to increasing concentrations of CO₂ in the atmosphere¹⁵ — both processes clearly cannot continue without limit. But the crucial question is whether auto-correction tendencies exist, what they might be and when and how they might have an impact. The natural first place to look for equilibrium tendencies for economic inequality trends is within the economic system, with taxation and property rights as currently structured. But it is always the case that the distribution of income depends crucially on the political decisions which establish taxation and property rights regimes. If current market mechanisms contain no readily discernible auto-stabilization mechanism, the next question is whether political economy provides enough auto-correction tendencies to produce a steady-state equilibrium.

Since the 1980s, in both Canada and the U.S., the rising share of the top 1% has been driven by strong growth at the top — a compound annual real growth rate of 4.03% annually between 1980 and 2007 in the U.S. — combined with very little real growth of the rest of the distribution. Logically, incomes shares can only stabilize if incomes grow at the same rate throughout the income distribution. If the trend to rising real absolute incomes of the top 1% shown in Figure 7 continues, one can only have a return to stable income shares if the other 99% of the income distribution starts to grow at the same rate.

Considered as a problem in differential growth rates of income, one can ask what market mechanisms might produce a sudden spurt of strong — i.e. approximately 4% per annum — growth of real incomes among the bottom 99% of Americans and Canadians. At the time of writing (April 2012) unemployment in the U.S. exceeds 8%, the U.S. poverty rate has surged to a record high and optimistic macro-economic forecasters are hoping for a relatively slow recovery from the recession of 2008, while pessimists worry about a second decline in economic activity. In both the U.S. and Canada, the longer term structural context of greater globalization and exposure to low wage foreign competition combines with minimal institutional protections from market forces, and the lowest social wages of transfers and public services among rich OECD nations. The percentage of the labour force unionized remains higher in Canada than in the U.S., but in both countries unions are at record lows of workplace power¹⁶. In the U.S. there are greater worries than in Canada about a declining quality of education, but both countries already have a highly educated labour force, so neither country can anticipate very large future increases in the human capital returns of average workers. In short, it is hard to see where a surge in income growth for the bottom quintiles of the income distribution could come from.

Alternatively, stability of income shares might return if some market mechanism were to reduce very substantially the rate of income growth at the top end of the income distribution — but a long tradition in economics argues that advantages are

cumulative and that the inherent logic of the market mechanism is to accentuated inequality over time. As Knight (1951:20) remarked:

“In the distribution of economic resources, atomistic motivation tends powerfully toward cumulatively increasing inequality. For all productive capacity — whether owned capital or personal capacities — is essentially “capital”, a joint creation of pre-existing capacity or the result of “accident”). And those who already have more capacity are always in a better position to acquire still more, with the same effort and sacrifice. This applies about as much to personal capacities as to property, though the latter is a more convenient way of passing “unearned” advantage to heirs or successors. It is a gross injustice, by one of several conflicting norms of justice generally accepted in a liberal society. But it is also the main reliance for the motivation for accumulation in all forms, hence of progress.”

Recent analyses¹⁷ in Canada and the U.S. of the income trends of the top 1% have noted both the importance of labour compensation as the primary source of their current incomes and the decline of the labour share of national income¹⁸. However, whether or not a high income was initially derived from labour earnings, the portion of it that is saved becomes personal wealth and will generate capital income in future periods. As a consequence, whatever the initial origins of the income gains of the top 1%, the longer the rise in their incomes goes on, the greater their acquisition of wealth. Even if future labour earnings some day cease to increase quite as rapidly, the return on accumulated savings from past income increases will produce continued income flows¹⁹.

But why exactly would one expect the rate of increase of top end incomes in the U.S. and Canada to slow appreciably? Available evidence (e.g. Murphy, Michaud and Wolfson, 2008) indicates that mobility into and out of top percentiles is, if anything, declining. Micro-economic models of “winner-take-all” executive, sports and celebrity markets offer no clear reason to expect any imminent deceleration of top pay. Indeed, if the size of the positional rents associated with being ‘top of the heap’ depend essentially on the aggregate size of the market being served, the growth in purchasing power of globalized markets seems more likely to assure continued acceleration of top pay, as the pleasures of the globalized brands of consumer society are discovered by hundreds of millions of newly middle class households in China, India, Brazil and elsewhere. Similarly, if the explanation is top managers’ control of executive compensation mechanisms, and they have for almost thirty years been capable of appropriating so much of the surplus generated by growth, why exactly can they be expected to stop doing so?

2.2 Unbalanced Growth and Macro-Economic Instabilities

Increasing income inequality, i.e. differential income growth, necessarily has general equilibrium effects. Income must be either consumed or saved. Hence, the rising incomes of the top of the income distribution in the U.S. and Canada have necessarily

gone partly to consumption and partly to savings. A consequence of rapid income growth at the top of the income distribution has been an increase in the flow of their savings²⁰ — mostly into financial markets. But financial instruments always have the characteristic that they are an asset to the holder, and a liability to the issuer. In order for the increasingly affluent to acquire more financial assets, somebody else has to acquire more financial liabilities²¹. Indeed, if aggregate expenditure is to balance with aggregate income, whenever the increasingly affluent abstain from consuming some of their increase in income, somebody else has to consume more than their income. By borrowing and spending, debtors balance the real flows of the economy, while simultaneously building up a stock of debt.

Recently, Kumhof and Rancière (2010:3) have noted:

“The United States experienced two major economic crises over the past century—the Great Depression starting in 1929 and the Great Recession starting in 2007. Both 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. When those debt-to-income ratios started to be perceived as unsustainable, it became a trigger for the crisis.”

It is certainly not a new idea that ever growing incomes at the top will produce an ever increasing flow of loanable funds — a flow which eventually produces a crisis in financial markets and a recession in the real economy. In the 19th century, Marx argued strongly that capitalism was prone to occasional realization crises, and that cyclical instability was inherent. “Under-consumptionists” like Hobson ascribed the growth of British imperialism in the late 1800s to inadequate domestic absorption of the output potential of capitalism. Milanovic (2009) and others have also argued recently that the root cause of the financial meltdown is income inequality. But these insights have been presented verbally — the contribution of Kumhof and Rancière is to document clearly some crucial trends and then present a dynamic stochastic general equilibrium model to illustrate formally that financial crises could be driven endogenously by income inequality.

As they note (2010:6) “An important finding, already stressed by ...Krueger and Perri (2006), is that the rise in income inequality (in the U.S.) has been much more pronounced than the increase in consumption inequality.” Krueger and Perri had themselves emphasized the current well-being implications of their findings²². Little attention was given to the fact that a divergence between trends in consumption inequality and income inequality necessarily implies some trend in the distribution of assets and liabilities. In the view of Kumhof and Rancière (2010:22), “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 sustain consumption levels, at least for a while. But without the prospect of a recovery in the incomes of poor and middle income households over a reasonable time horizon, the inevitable result is that

loans keep growing, and therefore so does leverage and the probability of a major crisis that, in the real world, typically also has severe implications for the real economy.”

The model of consumer utility maximization used by Kumhof and Rancière is entirely individualistic. They do not discuss bubbles in asset prices (e.g. in housing) and they make no appeal to a relative consumption motivation, even though their argument for increasing indebtedness of the middle quintiles would be even stronger if they recognized the possibility of ‘expenditure cascades’ for positional goods, which might be financed out of illusions of real estate wealth. As Robert Frank has put it (2005:139):

“positional concerns predict that sharply increased spending by top earners will exert indirect upward pressure on spending by the median earner. When top earners build larger houses, for example, they shift the frame of reference that defines what others slightly below them on the income scale consider an acceptable or desirable house. And when those people respond by building bigger houses, they in turn shift the frame of reference for those just below them, and so on, all the way down. Thus the median size of a newly constructed house, which stood at less than 1,600 square feet in 1980, had risen to over 2,100 square feet by 2001²³.”

Even before the recession of 2008, Leamer (2007:1) was arguing that “housing starts and the change in housing starts together form the best forward-looking indicator of the cycle.” His argument is that demographic trends are fairly smooth, so the fundamental demand for housing services also has a similarly smooth trend — but residential construction supply is cyclical. Periodically, housing booms are fed by the cost and availability of credit and by self-reinforcing expectations of increases in future house prices. These booms borrow real output from future periods. Excess construction during the boom phase leaves overhangs of housing for sale that take time to work off.

During the upswing, since houses are the main asset type held by middle income households, house price increases have a large impact on their perceived net worth²⁴. When, as in the U.S., financial institutions make it easy to monetize home equity, house price bubbles can then be used to “keep up with the Jones” in non-housing consumption, as well as to trade up in the housing market. This consumption race is fed by the escalating norms of top end ostentation — but eventually the bubble bursts. Since 2007, U.S. households have seen the down side of housing price volatility and leverage. But because houses are assets with a long life, the earlier surge in construction and borrowing during 2001 to 2007 produced an overhang of housing stock and mortgage liabilities that will have a long hangover.

Inherently, housing is a current service flow, needed by everyone, which is produced by a very long-lived asset, whose construction and purchase must be financed in credit markets. Home mortgages are the major liability type of the middle classes, whose incomes have stagnated. The price of their housing asset depends heavily on house price expectations and interest rates — both of which are variable. Although expenditure cascades from the escalating consumption norms of the super-affluent

amplify the tendency to booms and busts, with or without such influences a major implication of the ongoing trend to greater top end incomes is growing financial liabilities at the bottom and increasingly fragile financial assets at the top.²⁵ As poorer households become increasingly indebted, their probability of default increases — in the model of Kumhof and Rancière, deleveraging can only happen if debts are written off or workers' wages increase, enabling them to pay down debt.

However, this model of private sector instability is only part of the story. No government sector is modelled by Kumhof and Rancière, so they have no explicit treatment of the counter-cyclical spending of governments, in response to the collapse in real output and employment occasioned by financial crises. But in fact, throughout OECD nations, the Great Recession forced governments to stimulate aggregate demand by cutting taxes and raising spending.

Accounting identities have great power. When governments run deficits to stimulate aggregate demand in the depths of a recession, they add to the stock of government debt outstanding. Debt then accumulates or decreases over time according to equation (1).

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

D_t = Debt in period t
 r_t = average rate of interest in period t
 PB_t = Primary Balance in period t = (Taxes_t — Program Expenditures_t)

The burden of debt depends on how big it is relative to income²⁶ — for public finances, the Debt/GDP ratio is the crucial economic statistic. If GDP grows faster than debt, the Debt/GDP ratio declines over time. If Debt and GDP grow at the same rate, their ratio is constant. In either event, public debt is on a sustainable path. However, if the debt/GDP ratio is increasing over time, an ever larger amount of public expenditure must go to servicing the debt rather than program spending, a process which is unsustainable. Equation (2) summarizes the problem:

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

Y_t = GDP
 g_t = growth rate of GDP
 $\Delta (D/Y)_t$ = change in Debt/GDP ratio

In journalistic discussions of the government deficit and the public debt, most of the public angst is focused on the 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 the virtue of equation (2) is that the first term makes clear how much debt stability can depend on the differential between interest rates and the growth rate ($r_t - g_t$), interacting with the overhang of debt from the past (D_{t-1}/Y_t). Past debt accumulates faster than GDP grows whenever the interest rate exceeds the growth rate (i.e. when $r_t - g_t$

> o). When the stock of past debt starts to feed on itself, governments have to run continual Primary Balance surpluses, just to stabilize the Debt/GDP ratio. And the dilemma worsens, the greater is the Debt/GDP ratio. As Greece and Italy have discovered recently, to their great cost, once the Debt/GDP ratio exceeds 100%, a gap between the growth rate and the interest rate implies that huge increases in tax revenues and/or cuts to public services are necessary to stabilize the debt — but taking these steps reduces growth and thereby worsens the predicament.

Currently, the Primary Balance of the U.S. federal government is strongly negative and the Debt/GDP ratio is increasing by roughly 9 percentage points per year (from 53% in 2009 to 62% in 2010) - a process which is expected to continue for several years. When interest rates on short term debt are, as now, nearly zero, in Canada and the U.S., the cost of financing public debt is easily manageable. As well, debt can be monetized if new bond issues are simply purchased by the Federal Reserve or the Bank of Canada — as has already occurred, to some extent, under the rubric of “Quantitative Easing”.

However, many would argue that monetization of the public debt carries risks of inflationary instability²⁷. If and when inflationary pressures are combatted, monetary authorities will use the policy lever of an increase in interest rates (r_t) to reduce the rate of growth of aggregate demand (g_t) — thus widening the differential ($r_t - g_t$) at both ends. As Equation (2) tells us, when the Debt/GDP ratio is large, a differential between the interest rate and the growth rate ($r_t - g_t$) means that expenditure cuts and/or tax increases will also have to be large, in order to create continuing primary balance surpluses²⁸ big enough to prevent the debt/GDP ratio from compounding unsustainably²⁹. As a consequence, large expenditure cuts to ‘entitlement’ programs are currently on the table in U.S. budget discussions. If such cuts to the ‘social wage’ are made, this will accentuate the long term relative impoverishment of middle and lower quintiles of the U.S. income distribution, reducing further the slow growth of their real incomes. Even slower real income growth at the bottom will then accentuate rising income inequality and reinforce the imbalances of saving and consumption which initially helped create financial instability.

One can summarize this by noting that in a market economy, steady state equilibrium is the special case of balanced growth. When income growth rates are unbalanced, “one instability leads to another”. Because financial and real flows are interdependent, and flows accumulate to become stocks, an imbalance in income growth rates produces changing income shares. This implies that flows of consumption and savings must also change. Increasing income inequality, as in the U.S. and Canada, produces financial flows which compound into rising stocks of private indebtedness for lower income groups. 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 becomes increasingly fragile, whenever interest rates exceed the growth rate.

This paper has thus been arguing that increasing inequality, and its implications for instability, can be seen as a set of problems ultimately driven by differential rates of income growth — i.e. in the U.S. and Canada, inequality has been rising because the real incomes of the top few percentiles have been growing much faster than those of everyone else. For income shares to be stable, all income groups must grow at the same rate — what processes have historically helped produce strong income growth for the middle and lower quintiles of the income distribution?

Relatively rapid growth of low incomes has meant that Mexico's income distribution has, since 1995, become more equal. From 1940 to 1975 the income *share* of the top 1% in the U.S. and Canada also fell, because other people's incomes grew more rapidly than theirs. Indeed, Mexico in the mid 1990s had some points of similarity to Canada and the U.S. circa 1940 — in the sense that:

- 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 improvement in primary and secondary enrolment meant that high marginal returns to human capital investment were available for large numbers of people;
- capital deepening in sectors catching up to the technological frontier could produce substantial increases in marginal productivity in those sectors³⁰;
- and, in the political economy of social policy, a credible local 'hard left' political option had a "threat effect" on political elites.

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 the 1940s and 1950s, is that these structural changes were basically complete well before 1980. As Table 1 indicates, the percentage of the Canadian and American labour forces in agriculture is now very small, so out-migration from rural areas³¹ can only have a minor impact on the earnings distribution. Female labour force participation is already high. With populations that are already well educated, both Canada and the U.S. can really only improve human capital much at the post-secondary level, with lower marginal returns, for a smaller population fraction³².

As well, because the change in birth rates in Canada and the U.S. has been relatively small, comparably small differences in cohort sizes and future demographic impacts on inequality are implied. But in recent decades the decline in the birth rate in Mexico has been dramatic — which implies a substantial (and better educated) demographic bulge, which is now working its way into its peak earning years. Furthermore, as Mexican development moves into more of the industries (e.g. automo-

biles) which Rodrik (2011) characterizes as being ‘unconditionally convergent’ to best global productivity practices, it is easier in Mexico than in Canada or the U.S. to expect capital deepening and rapid catch-up growth of productivity and wages, which can push up the earned income of middle and lower quintiles.

In short, in a number of ways Mexico is an example of those countries which have structural reasons to expect that over the next few decades income growth in the middle and lower part of the distribution of income can be rapid enough to reduce inequality of market incomes. But such optimism is harder to find for countries like the U.S. or Canada.

3. IMPLICATIONS: POLITICAL ECONOMY

If market income inequality is increasing over time, and generating greater economic instability, can one depend on political economy to restore stability? Or might the political pressures generated by increasing economic inequality and instability be further de-stabilizing?

On one side of the argument is the U.S. example of Roosevelt’s New Deal in the 1930s. Faced with the mass unemployment that followed the financial crisis of 1929, the U.S. initiated a remarkable series of economic initiatives and structural reforms. The macro-economic stimulation of public works expenditures may have had mostly short-run impacts. However, regulatory reform of the financial sector, recognition of trade union rights through the National Labor Relations Bureau, the establishment of Social Security and increased progressivity of the tax system were all mechanisms which worked to decrease inequality and decrease the probability and severity of macro-economic crises³³. In the context of the times, the U.S. was arguably a social policy leader in reducing inequality — and the influence of these reforms lasted for decades, although their impact was gradually eroded after about 1980.

On the other side of the evidence is the historic example — in much of Latin America (not just Mexico) — of the impact of greater inequality of outcome on the political economy of public finances, as the elite withdraw into gated communities and find private alternatives for public services. In particular, rising income inequality tends to reduce equality of opportunity, because greater inequality of outcome increases the potential cost to affluent families of downward social mobility. The longer is the fall from the top, from one generation to the next, the more incentive affluent parents have to ensure some advantages for their children. Affluent parents who can afford private schooling for their own children know that higher school quality and better social networks will give a lifelong advantage to their own offspring. Why would the affluent then also support the higher taxes which might fund better schools for all children, and thereby enable the brats of the poor to compete more effectively with their own darlings? When most of the children of poor families never apply to university, state financing of the university sector may still

have bourgeois support — but under-funding of the primary and secondary public school system (with long run impacts on labour productivity and growth, as well as on inequality) has been one of the political economy legacies of high inequality throughout Latin America. And the combination of greater inequality of outcome and lessened prospects for upward mobility accentuates the political discontent of the disadvantaged³⁴.

Abstract models of political economy may generate predictions for abstract societies, but the real world of politics is inevitably governed by the influence of institutional structures, the context of events elsewhere and the limitations of options which history imposes on every nation — and by the vagaries of chance events³⁵. The key question, therefore, is what the chances are of stabilizing decisions driven by political economy, in the actual present context of the U.S., Canada and Mexico in 2012.

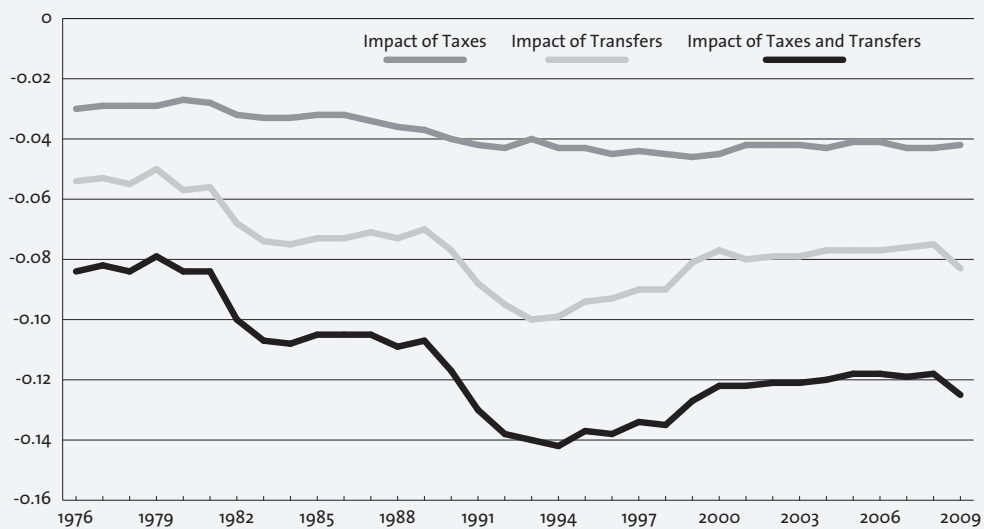
Of the three countries of North America during the past thirty years, Mexico stands out for its initiation of a major program of government redistribution — the *Progresas/Oportunidades* program, which started in 1997. As already noted, this has played an important role³⁶ in reducing economic inequality, particularly for the poorest, and particularly in rural areas. Why did this redistribution happen, after a long period of high and rising inequality?

As Esquivel (2008:6) notes, the 1982–1994 period in Mexico was marked by increasing inequality, from a very high initial level. In 1994 the North American Free Trade Agreement (NAFTA) came into force and Mexico experienced a severe macro-economic crisis, with a large devaluation and a sharp decline in output in 1995 (a drop of 8% in per capita GDP). The subsequent recovery was relatively robust (4% per year growth 1995–2000), aided by exports to the now-open U.S. market, which was then growing strongly. And 1994 was also the year of the Zapatista insurrection in Chiapas province — an event which forcefully reminded the elite of Mexico of the country's deep and recent history of violent revolution and civil conflict³⁷.

In the mid 1990s, as the Institutional Revolutionary Party (PRI) was losing its dependable control of political events, elite decision makers in Mexico had to worry about the possibility that the dislocations produced by free trade, and the deprivations produced by recession, might together push the populace towards social unrest, with unpredictable consequences. The policy response, to institute the *Progresas* social transfer program (with the twin aims of reducing inequality and encouraging human capital acquisition), can be seen as a classic example of how political actors can anticipate emerging social stresses and act to reduce systemic instability.

At approximately the same time, Canadian social transfers were being cut back substantially, following the fiscal crisis of Canada's governments of the mid 1990s. Canadians learned the practical power of public debt stability over social policy [see equation (2)] when, in moving to inflation targeting in 1988–90, the Bank of Canada massively increased real interest rates. The interest burden of past debt added to the cost of the automatic stabilizers of the recession of the early 1990s and produced a major public debt crisis³⁸. Expenditure cuts succeeded in erasing Canada's federal deficit,

FIGURE 8 Change in Gini Index of Equivalent Individual Income Canada, 1976–2009



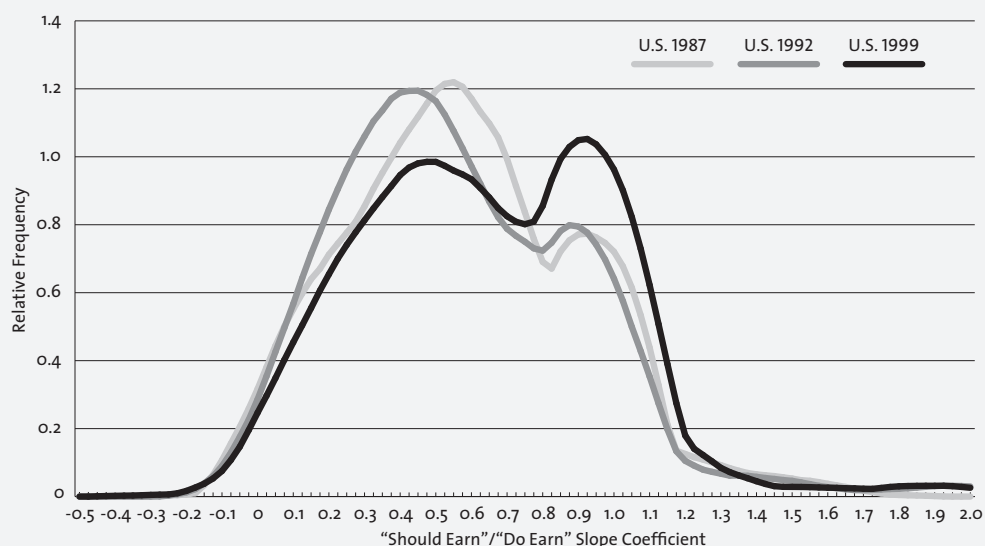
Source: Author's calculations using CANSIM v46442259, v46442295, v46442331

and by the late 1990s there was enough economic growth, driven by a very undervalued exchange rate and strong U.S. growth, for fiscal surpluses to emerge. However, the policy response in 2000 was to cut tax rates instead of restoring transfer payments.

In Canada, the 1990s therefore saw a major change in the size and role of government. Total government expenditures as a percentage of GDP declined substantially and the redistributive role of government changed. Although prior to 1995 rising inequality of market incomes had been largely offset by the tax-transfer system, after 1996 there was less of this. Figure 8 updates the work of Heisz (2007), who calculated for each year the Gini index of inequality in market income in Canada and the change in the inequality of equivalent individual income associated with taxes, with transfer payments and with taxes and transfers considered jointly. From 1975 to 1995 Canada's system of transfer payments played an increasing role in reducing inequality — and a decreasing mitigating role since then, thereby reinforcing the trend to greater market income inequality.

As Figure 8 illustrates, the Canadian political system can change directions fairly sharply. There is no tradition of extra-parliamentary opposition and Canada's historical record of revolutionary violence is essentially zero³⁹. With at least three, and often more, political parties to split the vote and a "first past the post" constituency system, it is common (as now and as in the 1990s) for 40% of the popular vote to produce a parliamentary majority. Once elected with a majority, strict party discipline enables a Prime Minister to operate almost as a 'constitutional dictatorship', only somewhat constrained by provincial constitutional rights to control of social and educational policy.

FIGURE 9 The Distribution of Preferences for Leveling in the United States, 1987–1999



In contrast to the U.S., Canada has long had a political party that articulates a social democratic alternative (the CCF/NDP), and this party has held power provincially — notably in Saskatchewan, which instituted Medicare in 1962. Indeed, Canada’s brief surge of social policy activism in the late 1960’s and early 1970’s, and the national Medicare system, was the price the Liberal minority governments of the day paid for NDP support. Nevertheless, although Canadians now have a smug self-image as the “kinder and gentler” part of North America, this is a national myth of relatively recent manufacture. “Colder and harder” is a better description of Canada, compared to the U.S., until well into the 1960’s⁴⁰. The 2011 election produced a majority Conservative government whose priorities are deficit reduction, military spending and tougher penalties for crime. There is no hint from official Ottawa that Canada’s rising economic inequality is viewed as a problem — but even if it were, action is unlikely since policy makers are pre-occupied with not being “competitive” with the U.S.⁴¹.

In summary, in Canada the four year rule of a majority government could in principle rapidly enact the sort of comprehensive systemic reforms that would stop inequality increasing and restore stability — but this is extremely unlikely. Canada may have the political institutions which could enable systemic change, but the actual policy reforms of the past 15 years have accentuated inequality. There is no sign of any political will to slow the increase in inequality.

This leaves the U.S. case. But although Roosevelt’s New Deal may have saved American Capitalism from itself in the 1930s, could such a program be enacted today? The American political process begins from deep divergences in fundamental beliefs about the fairness of great inequality. Figure 9 is taken from Osberg and

Smeeding (2006), who noted that Americans, even more than other nationalities, tend to underestimate vastly the incomes of top executives. They plotted the fraction of Americans who believe that what top income people ‘should earn’ is less than what they ‘do earn’. In the U.S., unlike other industrialized countries, there is a clear bi-modal split in the data, with one mode centred on the belief that “should earn” equals “do earn” (i.e. the ratio between them is about one) and another large group who believe that “should earn” is much less than “do earn”.

Osberg and Smeeding concluded (2006:471) that:

“a polarization of attitudes and a widening discrepancy between public perceptions of actual and “fair” top-end inequality, .. does not sound like a likely recipe for social or political stability. Under majority rule in a two-party system, one mode of the distribution may control the levers of redistributive policy for a time, but the underlying polarization of attitudes implies that there is a substantial gulf in desired public policies, and that a relatively small migration of voters may suffice to tip the balance between two very different conceptions of “fair””.

However, what Osberg and Smeeding had forgotten was the elaborate checks and balances of American political institutions. A small migration of voters may tip the balance, but a two year electoral cycle means that it is not long until the balance can tip back again. With relatively weak party discipline, and two legislative bodies to pass, a congressional majority often has to be assembled anew on every vote, leaving lobbyists great potential to delay or obstruct. Court decisions play a larger role in policy formation than is common elsewhere, implying that judicial appointments have a long period of indirect influence. And unlike many other countries (including Canada), there is no limit on campaign donations or political advertising, so there is no legal barrier in the U.S. to the affluent buying as much political influence as they care to purchase — hence increasing inequality deepens the ability of the affluent to buy the legislative deference that their wealth depends on.

The bottom line appears to be political paralysis, at least with respect to policies that might arrest increasing inequality. Street protests (e.g. the Occupy Wall Street movement) may give a hint of the inchoate anger of many people at economic outcomes, but they are singularly lacking in specific policies. Some influential capitalists (e.g. Buffett, 2011) may perceive (correctly) that systemic economic and political stability requires raising taxes on top end incomes, both to help reduce U.S. government deficits and to rebalance taxation in a more progressive direction. However, with part of the legislature controlled by a party that refuses to countenance any talk of *any* tax increase — even for millionaires — it is hard to anticipate structural reforms that would put a brake on rising inequality.

4. CONCLUSION

This paper began with the observation that inequality trends have diverged within North America in recent decades and asked what can be learned about the implications of inequality trends from the experiences of Canada, the U.S. and Mexico.

One immediate observation is that inequality trends differ, and have different implications, at different stages of development. The structural shifts of economic development — rural out-migration, expansion of primary and secondary enrolment, increased female employment and declining birth rates — can have major impacts on the incomes of lower and middle segments of the income distribution. Together with the establishment of a large social transfer program, these shifts have helped Mexico reduce inequality (albeit from a high level) in recent years. Since most of the world's population now lives in countries which are poorer than Mexico, with less urbanization, lower levels of education and female labour force participation and substantial room for improvement in social transfers, the Mexican example (like that of Brazil in recent years) is a hopeful one.

However, over the last thirty years, Canada and the United States have seen increasing inequality of market incomes. Although there are numerous dimensions to inequality trends, this paper has argued that the main event in increasing inequality in the U.S. and Canada has been the rapid growth, since the 1980s, in the real income of the top percentiles. Combined with stagnant real incomes in most of the distribution, this differential in growth rates has produced rapid increases in the income share of the very top end, which drives much of the change in summary indices of inequality, like the Gini index.

Stability in income shares can only happen if the real incomes of the bottom 99% of households grow at the same rate as the real incomes of the top 1%. For approximately the last thirty years, this has not been the case in Canada or the U.S..

Is income inequality likely to stabilize, on its own? This paper has not been able to locate empirical evidence or theoretical arguments to expect that market income growth rates will equalize any time soon — either due to an acceleration of the income growth rate of the bottom 99%, or a decline in income growth prospects for the top 1%.

However, the continuation of a divergence in income growth trends necessarily creates changing flows of consumption and savings. Although aggregate demand can be maintained in the short run if the savings of the increasingly affluent are lent to those with stagnant incomes, their increasing indebtedness leads inevitably to financial fragility. The trend in the U.S. and Canada to rising income inequality thus leads to periodic financial crises, greater volatility of aggregate income and, as governments respond to mass unemployment with counter-cyclical fiscal policies, a compounding instability of public finances.

The conundrum in all this inequality-induced macro-economic instability is that it clearly can be avoided. A steeply progressive income tax system can reduce the im-

balances of financial flows, lessen the volatility of GDP and help pay off government deficits. Yet, in both the U.S. and Canada, the progressivity of the income tax system has been substantially eroded, over the same period in which the pre-tax incomes of the top 1% have grown most strongly. Even if an occasional deviant multi-billionaire (Buffett, 2011) protests that his income tax rate is absurdly low, indeed less than the tax rate of his employees, he is outgunned by the other billionaires who contribute to anti-tax crusades. There appears to be little likelihood of a return to the progressivity of tax regimes during the era (1946 to late 1970s) when income shares were roughly stable in North America, and massive financial crises were avoided.

The recent historical experience of Canada and the U.S. is clearly inconsistent with the simplistic political economy theories that predict that the 'median voter' in a more unequal society will vote in more redistribution and more progressive taxation. Indeed, recent history offers much more evidence consistent with the 'deeper pockets' model of political influence — that one can expect great wealth to be used in the political process to accentuate further wealth inequality⁴². In some countries, effective legal limits on political funding are established by legislation, but in the U.S. this has been foreclosed by Supreme Court decision. When the dominant political feedback loop is that more income for the top 1% enables more contributions and more political influence by the top 1%, there is little reason to believe that there is some automatic tendency of political economy that will restore stability of income shares and financial flows. Indeed, the myopic among the top 1% are often attracted to more extreme movements (e.g. the Tea Party) which aim at eroding even further the remnants of regulation and taxation that still keep some bounds on systemic instability. To the extent that such anti-tax movements can attract funding, the feedbacks of political economy mechanisms can aggravate the tendency to increasing inequality and systemic instability.

The logical implication of all this for Canada and the U.S. is the likelihood that continued increasing inequality produces a secular increase in financial volatility and periodic financial crises which leave behind deeper and longer busts in the real economy. Although it is clear that ever increasing inequality is a trend that cannot be sustained and that unsustainable trends cannot, and therefore will not, be sustained indefinitely, it is not yet clear what will succeed these trends.

Popular protests against increasing inequality (i.e. the Occupy Wall Street movement) have been widespread and have received media attention — but it is not yet clear whether and when these inchoate protests can coalesce into meaningful political action. It would be nice to think that newly available internet technologies could facilitate new movements of popular democracy, and not just improve the efficiency of the surveillance state, but that is uncertain. Although there are some important parallels between the causes and consequences of the 1929 and 2007 financial crises, the intervening decades have seen such fundamental change in social context that political and economic events will clearly evolve differently this time.

Nevertheless, two overarching morals can probably be drawn from historical experience. First is the lesson that increasing economic inequality, i.e. unbalanced income growth, creates multiple interacting ripples of financial, economic and political instability. There is no convincing evidence that these instabilities are automatically self-correcting. Second is the lesson that politics matters. Although the economic instabilities of the 1920s and 1930s undoubtedly contributed to how the political economy of Europe evolved during those two decades, that historical record contains examples of both catastrophically dysfunctional responses (e.g. Nazism in Germany, Fascism in Italy and Spain) and enduring success stories (e.g. the Scandinavian social democracies). Political forces and decisions made the difference then and they will make the difference this time around as well. In North America, during the 1930s, the U.S. political system was, under Roosevelt, able to produce the institutional innovations necessary to stabilize the growth process for the next fifty years — one can hope for a repeat of that success.

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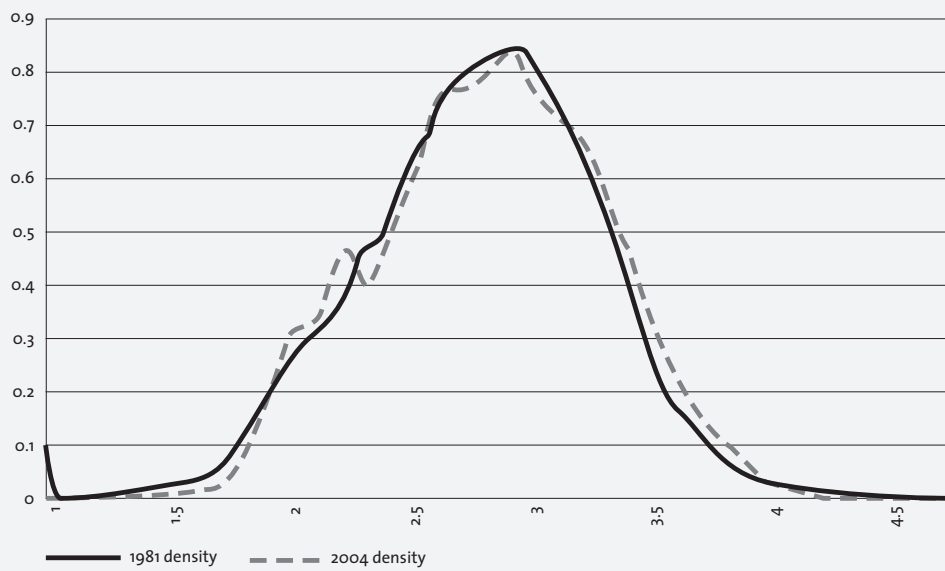
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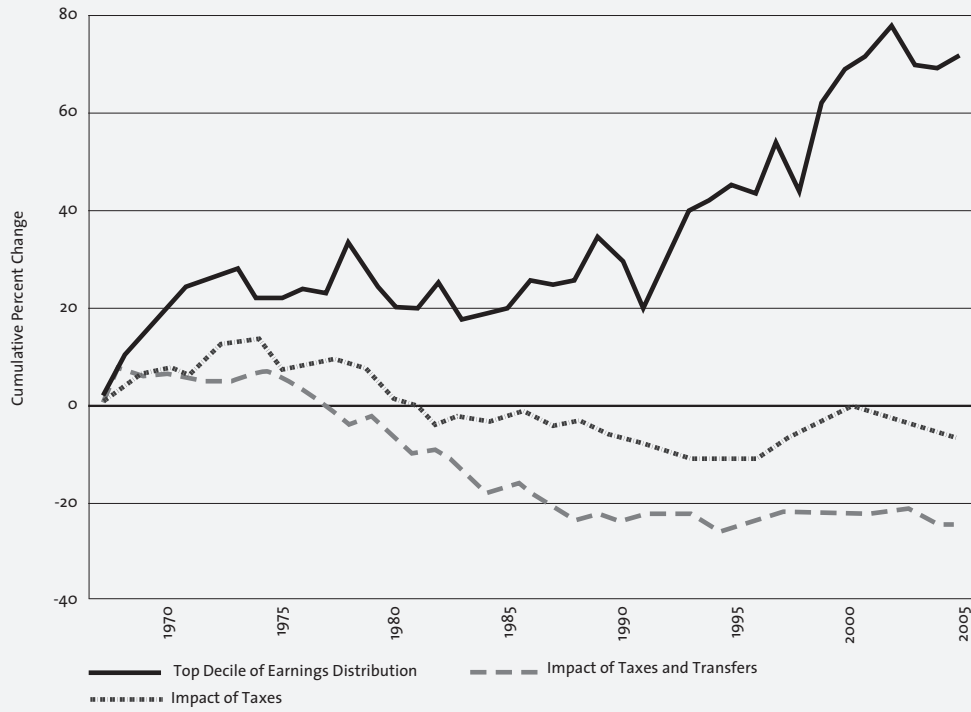
Appendix 1

FIGURE A1 Density of log hourly wages of employees aged 25–64, 1981–2004 Canada



Source: Survey of Work History of 1981; Labour Force Survey of 2004.

FIGURE A2 **Male Hourly Real Wage**



Endnotes

1 This gibe has been ascribed to Aaron (1978) by, among others, Salverda, Nolan and Smeeding (2009:4). Economic models of steady-state growth first became popular during this post-war period of nearly constant income shares — earlier economic writers tended to emphasize the instabilities of a capitalist system.

2 Like the unemployment rate, the savings rate or the propensity to import, the Gini index has a mathematical upper bound of one, and a far lower practical upper bound in any conceivable real economy. Milanovic, Lindert and Williamson (2009) note that the survival subsistence needs of workers can be satisfied with a smaller percentage of national income in rich countries, so maximum possible inequality rises with mean income. However, their assumption that subsistence is an absolute income level, which they set at \$300 PPP per capita — in all countries at all times — is crucial to their calculations of maximum possible inequality.

3 Note: The income concept used by the OECD is that of disposable household income in cash, adjusted for household size with an elasticity of 0.5.

4 Yalnizyan (2007) uses decile share data for Canada and emphasizes the income gains of the top 10%.

5 Where recent data is feasible, this paper often addresses the twenty year time frame 1990 to 2010. However, the Canada-US Free Trade Agreement (which substantially reduced barriers to Canada-US labour mobility for professionals and executives, following a long period of restrictions — see Davies and Winer, 2011) was signed in 1988, which was also near the peak of the late 1980s business cycle. The last full year of data before the Great Recession was 2007. So the 20 year period 1987 to 2007 is also useful to analyze.

6 Lu, Morisette and Schirle (2011) provide decompositions of factors influencing the inequality of family earnings in Canada.

7 Clearly, the distribution of annual incomes in a given year is a cross-sectional snapshot of individuals of different ages who typically experience growth in earnings over their life cycle. For discussion of how the age/earnings profiles of entering cohorts shifted down in Canada see Beaudry and Green (2000).

8 Murphy, Roberts and Wolfson (2007) make the same point with income tax data from 1982 to 2004 — very little change in real income for the bottom eight deciles. Alternative measurement choices (e.g. adjusting for household size or direct taxes) make little difference. In Figure 2 and elsewhere CANSIM refers to Statistics Canada's CANSIM database accessed at <http://datacentre.chass.utoronto.ca/chasscansim/>

9 The existence and extent of a widening college / high school differential in Canada has been contested terrain (see Burbidge, Magee and Robb (2002), Boudarbat, Lemieux and Riddell (2010)) — but it is generally agreed that the differential has widened much less (if at all) than in the US. The standard explanation is 'supply-side' (due to the considerably greater relative increase in supply of college graduates in Canada).

10 Since Figures 3 and 4 refer to data on annual income, there is the possibility that greater transitory variation in incomes and/or more income mobility over the life-cycle might account for increasing top end inequality in annual income — but this is unlikely (see Panousi et al (2011) and Murphy, Michaud and Wolfson (2008), among others).

11 Since the Free Trade Agreement of 1988, Canadian executives and professionals have been able to get freer entry to the U.S. than previously. As Saez and Veall (2007) note, Francophone Canadian tax-filers, who can be presumed to be self-identifying by their choice of language of tax form as less mobile to the US, show a slighter trend than Anglophones to greater top end income shares.

12 Why focus on the top 1% and not the top 0.5% or top 5%? The further up one goes, the more rapid the income growth. Figure 6 reports rates for percentiles (excluding capital gains). For corresponding income intervals, for the twenty year period 1987 to 2007, the compound annual real rates of income growth in Veall's income tax data are 0.83% (90th to 95th percentile), 1.37% (95th to 99th), 2.17% (99th to 99.5th percentile), 3.01% (99.5th to 99.9th) and 4.98% (99.9th percentile to 100). Focusing on the top 1% group (who as a group had a compound growth rate of 3.46%) is thus a somewhat arbitrary compromise — all these income growth rates are far greater than for bottom percentiles of the distribution.

13 Thanks to Mike Veall for generously making available his raw data on Canada.

14 In the US, from 1946 to 1983 the incomes of the top 1% averaged \$293,000 (in 2008 US dollars), and the simple average of annual growth rates was 0.9%.

15 There is also a causal link between rising inequality and Greenhouse Gas emissions. The per-dollar CO₂ intensity of consumption has improved significantly over time — by 17.8% in Canada from 1990 to 2005. Because most of the already resident population's incomes have risen by much less than that percentage, their CO₂ emissions have actually fallen. Increased CO₂ emissions in the U.S. and Canada come from those at the top end of the income distribution and new immigrants — see Osberg (2008).

16 In the private sector, the Canadian unionization rate in 2009 was 16.1% compared to 6.9% in the US in 2010 (over-all, 29.3% compared to 11.9%). Uppal (2010), BLS (2011)

17 Veall (2010), Atkinson and Piketty (2007).

18 At the very top, the distinction between capital income and labour income can sometimes become problematic. When control diverges from ownership, the CEOs of large corporations may have a degree of control over the executive compensation process to match their effective control over the capital stock, and their rewards then depend on the amount of capital they control, not just the amount that they own personally. In examining CEO compensation, Gabaix and Landier (2006, 2008) find differences in labour characteristics (individual effort or talent or incentives or qualifications) play a minor role. They explain the six-fold increase in CEO compensation in the US between 1980 and 2003 as “an equilibrium consequence of the substantial increase in firm size”. If so, arguably “Capital’s Share” in National Income should be calculated to include income that derives from *control over* capital, as well as *ownership* of capital, and the factor origins of the incomes of the top 1% would look quite different.

19 Wolff (2011: 18, 24) notes that the Gini coefficient of net worth in the US changed little from 1989 to 2007 (which reflected the impact of the house price bubble on middle class wealth as well as stock market gains for the more affluent), but that wealth inequality did increase when pension wealth is counted.

20 The argument here only requires that the marginal propensity to save of the top 1% is positive. If the affluent save more, at the margin, than the poor — i.e. if the marginal propensity to save increases with income — then rising incomes among the top 1% would make the argument even stronger. All of this is quite consistent with the possibility that greater consumption by the poorer 99% could imply a declining average *national* savings rate.

21 Conceivably, those liabilities could be foreign, as when UK capital flowed to investments around the world in the 19th century. However, the US has been running current account deficits and importing capital.

22 During this period, in the US and Canada, households arguably needed more income (and more consumption of market goods) to enable the same level of utility, because of increasing economic insecurity and the loss in foregone home production which accompanies rising female employment. But that is not our concern here.

23 Frank emphasizes the socially visible and positional nature of the consumption of housing services, but he was writing at a time when the US housing price bubble was still inflating, and he does not discuss the role that illusions of real estate wealth play in financing excess consumption.

24 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 fell by 35.1%.

25 In an open economy setting, if increasing inequality only occurred in one small country (e.g. Canada), global market diversification of financial portfolios might be possible. However, perhaps because of easy movement of top end labour among English-speaking environments,

other 'Anglo' countries have followed the US example, with a lag, and have had similar trends of rapidly rising top end incomes, precluding this possibility. In actual fact, in the lead-up to the 2008 Recession the US ran a substantial current account deficit as consumption growth, fuelled partly by perceived capital gains in housing wealth, absorbed both domestic and foreign savings.

26 Although equations (1) and (2) are discussed here in terms of the public debt and deficit, the logic of debt stability is exactly identical for private sector debt. In Canada today, the household debt / household income ratio is at a record high (1.49) — something which is only sustainable at current exceedingly low interest rates.

27 Influential economists (e.g. Mankiw, Rogoff, Krugman) now advocate higher inflation in the U.S., arguing it assists deleveraging — see Miller (2009).

28 If, for example, real interest rates return to the 4% level and real growth is 2%, a debt/GDP ratio of 80% implies that taxes must exceed program spending by at least 1.6% of GDP (which is currently about \$240 Billion in the US) if the debt/GDP ratio is not to increase further. Given that US public debt has already risen substantially (and is expected to continue to increase), a 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. $r_t > g_t$).

29 In advocating fiscal stimulus to counteract business cycle downturns, Keynes himself was quite aware that deficit flows will cumulate to debt stocks. His preferred remedy for debt instability was to balance the government budget over the business cycle, and to run surpluses to retire debt during economic booms. Few democratic governments have been able to do that. The Great Depression that followed the financial crisis of 1929 dragged on during the 1930s and was really only ended by enormous public expenditures on wartime production. The debts of both Canada and the US at the end of World War II were not actually paid off by budget surpluses to any significant extent — they just shrank as percentage of GDP over a long period of rapid growth and low interest rates (i.e. $r_t < g_t$). When the growth rate exceeds the interest rate, the debt/GDP ratio can decline even with Primary Balance deficit.

30 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. In Mexico, the story is one of underdevelopment and convergence.

31 As Harris and Todaro (1970) noted long ago, the expected value of income gains in formal sector employment is much of the motivation for rural-urban migration in developing countries — even if migrants may have to take their chances on the probability of informal sector urban employment. Out-migration from rural poverty and structural shifts in employment thus have two margins of impact on the earnings distribution of a country like Mexico — the rural/urban differential and, as the formal sector grows, the informal/formal sector differential within urban areas.

32 High unemployment has also been an important part of the context of inequality trends over the past thirty years in Canada. Although the national unemployment rate rarely approached 7% before 1980, it has almost always been higher than that since then, coinciding with a redefinition of the objective of the Bank of Canada as limited to inflation control. The U.S. Federal Reserve has continued to emphasize low unemployment as a policy objective — unlike the Bank of Canada — and, during the 1990s, successfully reduced unemployment to below 5%, with substantial benefits to income growth for lower deciles. This did not happen in Canada — see Osberg (2011).

33 See Attinasi (2011) for an examination of how greater progressivity of the income tax system reduces aggregate output volatility.

34 Educational outcomes are typically known rather early in life. Hence, when prevailing political rhetoric stresses the importance of education for life chances, there is a down side — those who have not done well on tests are told repeatedly, while they are still quite young, that disadvantage is theirs forever.

35 Ronald Reagan’s administration played a pivotal role in the acceleration of US inequality but his election hung by a narrow string. Jimmy Carter was presiding over a prosperous economy when his re-election strategy was blind-sided by the Iran hostage crisis. When two US special forces helicopters collided in a desert sand storm in April 1980, the American attempt to rescue their hostages failed ignominiously and a muscular Ronald Reagan rode the ensuing public reaction to US humiliation into the White House. But had the helicopters not collided, and had the rescue mission succeeded, US TV networks would have been broadcasting images of Jimmy Carter at the airport, welcoming home the rescued hostages, in the middle of a Presidential election race.

36 Similarly, the introduction of Bolsa Familia since 2003 in Brazil has reduced that country’s inequality.

37 The Revolution and ensuing Civil Wars of 1910–1920 were followed by the Cristero War of 1926–1929. Under a variety of leaders, the Institutional Revolutionary Party, or PRI, held power from 1929 until the election of 2000. Villarreal (2002:480) has described the post-revolutionary PRI *cacique* as “a local leader who has total or near total political, economic, and social control of a geographic area” and “who rules by threatening and using violence against his opponents and by disbursing goods and favours to his supporters, the core of whom are often relatives.”

38 Strong GDP growth and low interest rates had enabled Canada’s debt/GDP ratio to decline from the late 1940s to the mid 1970s. However, the 1980–82 recession, combined with earlier tax policy changes, increased the debt/GDP ratio and left public finances highly vulnerable to an increase in debt carrying costs. See Osberg and Fortin (1996).

39 In the last two hundred years, Canadian history books record only four instances of civil strife — the 1837–38 Rebellions in Upper and Lower Canada, the Riel Rebellion of 1885, The Winnipeg General Strike of 1919 and the Front de Liberation Quebecois separatist movement of 1963–1970. Wikipedia assesses the death toll in these events as 212, 128, 2 and 7 respectively, which leaves Canada’s two century death total (347) well below estimates of one Mexican event — the 1968 massacre of students in Tlatelolco Plaza.

40 Canadians did not, for example, get public pensions (CPP/QPP) until 1967, some 32 years after Americans got Social Security, and Canada’s lower rate and depth of poverty is a strictly post-1970 phenomenon.

41 Part of the argument for Canadian policy inaction is the spectre of tax-induced emigration of the elite, should income tax rates at the top creep above US rates. When the other 99% hear this refrain constantly repeated, it reinforces the perception that the top1% feel no sense of loyalty to the society that has enabled their incomes.

42 As would be predicted by Power Resource Theory in sociology.