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Comparisons of Economic Well-Being in Canada and the United States the 2000s

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COMPARISONS OF ECONOMIC WELL-BEING IN CANADA AND THE UNITED STATES THE 2000s

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Abstract: We use here a new measure of economic well-being called LIMEW. LIMEW differs from the official U.S. Census Bureau measure of gross money income (MI) in that it includes all personal taxes, noncash transfers, public consumption, income from wealth, and household production. Our most important finding is that median equivalent LIMEW was at parity between Canada and the U.S. around the year 2000, while the ratio of median MI was 1.05 in favor of the U.S. Moreover, median equivalent LIMEW grew slightly faster in Canada than the U.S. in the early 2000s. Median total work hours was also less for Canada than U.S. – a 7 percent difference – as was *mean* total work hours -- a 12 percent difference. According to the LIMEW measure, the public sector was the leading source of middle class well-being growth between 2000 and 2004 in the U.S. while the growth of base income (notably, labor earnings) led the way in Canada from 1999 to 2005. Inequality was also much less in Canada. The Gini index for equivalent LIMEW was 38.6 in the U.S. around 2000 and only 28.7 in Canada, a 10.0point difference. Much of the difference can be traced to the greater importance of income from nonhome wealth in the U.S. The difference in Gini coefficient for equivalent MI was smaller, a 6.8 point gap. However, while the Gini index for equivalent MI fell by 0.9 points in the U.S. in the early 2000s, it increased by 1.7 points in Canada.

Around 2000, single females had an average LIMEW that was 61 percent that of married couples in the U.S. and 62 percent in Canada. According to LIMEW, the elderly were considerably better off than the non-elderly around 2000 in the U.S., a ratio of 1.13. In contrast, in Canada, the LIMEW of the elderly averaged only 86 percent that of the non-elderly. Gaps in well-being based on LIMEW by schooling group are much higher in the U.S. than Canada. Around 2000, the ratio of LIMEW for the least educated group relative to college graduates was 0.53 in the U.S., compared to 0.66 in Canada; the ratio between high school and college graduates was 0.64 in the U.S. and 0.76 in Canada; and that between those with some college and college graduates was 0.72 in the U.S. and 0.78 in Canada.

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1. Introduction

The picture of economic well-being is crucially dependent on the yardstick used to measure it. We develop a measure that is broader in scope than the standard measure of gross money income (MI) used by almost all OECD countries in that our measure includes public consumption, income from wealth, and household production. We then provide comparisons of our measure for the U.S. and Canada in the early 2000s. Particular attention (and resources) is devoted to creating consistent measures across the two countries.

Gross money income (MI), the most widely used measure of economic well-being in the United States and almost all advanced capitalist countries, has been criticized on several grounds. The landmark report by the Canberra Group (2001), a group of international experts on household income statistics, recommended, among other things, that estimates of in-kind social benefits be added and the tax burden subtracted from money income to arrive at a better measure of household economic well-being.

MI seeks to estimate households' command over commodities. Although commodities are of critical importance, they form only a portion of the entire set of goods and services available to households. The state plays a crucial role in the direct provisioning of the "necessaries and conveniences of life" (to use Adam Smith's famous expression), such as public education and highways ("public consumption"). Nonmarket household work, such as childcare, cooking, and cleaning, also provides the necessaries and conveniences of life ("household production").

In this paper, we report estimates of the Levy Institute Measure of Economic Well-being (LIMEW), a measure of households' command over resources that is more comprehensive than MI. LIMEW includes estimates of public consumption and household production, components that are excluded in most available measures of economic well-being. It also includes estimates of long-run benefits from the ownership of wealth (other than homes) in the form of an imputed lifetime annuity, a procedure that, in our view, is superior to considering only current income from assets.

There are three key motivations behind constructing our broader measure. First, trends in economic well-being are sensitive to how we choose to measure well-being. A broader measure of economic well-being might be a better guide to actual differences in

the standard of living across countries and over time. Second, in order to study disparities among key demographic groups, money income might give us only a partial picture of the relative advantage of one particular group over another. Third, our broader measure provides a more comprehensive measure of economic inequality. As one might expect, household production and public consumption are distributed much more equally than earnings among households. On the other hand, inequality in wealth is generally much higher than that of income or earnings. Our measure allows us to estimate the net effect of including these components.

The goal of this paper is to create and compare estimates of the LIMEW for Canada and the United States for comparable years. The estimates for each country will for around 2000 and 2005.

We believe that the new results contained in this paper may force us to rethink the growth of well-being and trends in inequality in the postwar period among the two countries. Moreover, they provide surprising findings regarding the relative well-being of the two countries. The new findings highlight the extraordinary (and little known) role played by the government in promoting increases of well-being. They also reveal that developments in inequality are to a large extent due to periodic spikes in household wealth.

The remainder of this paper is divided into five sections. The next section, Section 2, provides an overview of the components of LIMEW (see, e.g., Wolff and Zacharias 2007a). Two major components—income from wealth and net government expenditures—are examined in, respectively, Wolff and Zacharias (2007b) and Wolff and Zacharias (2009). Historical estimates of LIMEW for the U.S. and a detailed discussion of the empirical methodology can be found in Wolff, Zacharias and Masterson (2009). Section 3 presents a comparison of overall well-being between Canada and the U.S. Section 4 presents a comparison between the two countries by demographic sub-group, including family type, age group, and educational group. Section 5 looks at economic inequality in the two countries. Concluding remarks are made in Section 6. The Appendix contains details on the construction of LIMEW for the U.S. and Canada.

2. Components of LIMEW

LIMEW is constructed as the sum of the following components (see Table 1): base money income; income from wealth; net government expenditures (both cash and non-cash transfers and public consumption, net of taxes); and household production. We provide here a summary of the procedures used to construct LIMEW.

Base money income is defined as gross money income *less* the sum of property income (interest, dividends, and rents) and government cash transfers (e.g., Social Security benefits). Earnings make up the overwhelming portion of base money income. The remainder consists of pensions, interpersonal transfers, workers' compensation paid by the private sector, and other small items.

The second component is imputed income from the household's wealth holdings. MI includes interest, dividends, and rent. From our perspective, property income is an incomplete measure of the economic well-being derived from the ownership of assets. Owner-occupied housing yields services to their owners over many years, thereby freeing up resources otherwise spent on housing. Financial assets can, under normal conditions, be a source of economic security in addition to property-type income.

We distinguish between home wealth and other wealth. Housing is a universal need and home ownership frees the owner from the obligation of paying rent, leaving an equivalent amount of resources for consumption and asset accumulation. Hence, benefits from owner-occupied housing are reckoned in terms of the replacement cost of the services derived from it (i.e., a rental equivalent).[1] We estimate the benefits from nonhome wealth using a lifetime annuity method.[2] We calculate an annuity based on a given amount of wealth, an interest rate, and life expectancy. The annuity is the same for the remaining life of the wealth holder and the terminal wealth is assumed to be zero (in the case of households with multiple adults, we use the maximum of the life expectancy

[1] This is consistent with the approach adopted in the U.S. national accounts.

[2] This method gives a better indication of resource availability on a sustainable basis over the expected lifetime than the standard bond-coupon method. The latter simply applies a uniform interest rate to the value of nonhome wealth. It thereby assumes away differences in overall rates of return for individual households ascribable to differences in household portfolios. It also assumes that the amount of wealth remains unchanged over the expected (conditional) lifetime of the wealth holder.

of the head of household and spouse in the annuity formula). Moreover, in our method, we account for differences in portfolio composition across households. Instead of using a single interest rate for all assets, we use a weighted average of asset-specific and historic real rates of return,[3] where the weights are the proportions of the different assets in a household's total wealth.

The third component is net government expenditures—the difference between government expenditures incurred on behalf of households and taxes paid by households. Our approach to determine expenditures and taxes is based on the social accounting approach (Hicks 1946; Lakin 2002: 43–46). Government expenditures included in LIMEW are cash transfers, noncash transfers, and public consumption. These expenditures, in general, are derived from the National Income and Product Accounts. Government cash transfers are treated as part of the money income of the recipients. In the case of government noncash transfers, our approach is to distribute the appropriate actual cost incurred by the government among recipients of the benefit.[4] In contrast, the Census Bureau includes the fungible value of medical benefits in EI. The fungible-value method is based on the argument that the income value for the recipient of a given noncash transfer is, on average, less than the actual cost incurred by the government in providing that benefit [see, for example, Canberra Group (2001: 24, 65)]. This valuation method involves estimating how much the household could have paid for the medical benefit, after meeting its expenditures on basic items such as food and clothing, with the maximum payment for the medical benefit set equal to the average cost incurred by the government.

We do not use the fungible-value approach because of its implication that recipients with income below the minimum threshold receive no benefit from the service (like health care). This implication is inconsistent with our goal of measuring the household's access to or command over products. Further, unlike the social-accounting

[3] The rate of return used in our procedure is real total return (the sum of the change in capital value and income from the asset, adjusted for inflation). For example, for stocks, the total real return would be the inflation-adjusted sum of the change in stock prices plus dividend yields.

[4] In the case of medical benefits, the relevant cost is the "insurance value" differentiated by risk classes.

method, the fungible-value method would not yield the actual total government expenditure when aggregated across recipients. Such a feature is incompatible with our goal of estimating net government expenditures using a consistent methodology.

The other type of government expenditure that we include in LIMEW is public consumption. We begin with a detailed functional classification of government expenditures. We then exclude certain items because they fail to satisfy the general criterion of increasing the household's access to goods or services. These items generally form part of the social overhead (e.g., national defense) and do not provide for a market substitute. Other expenditures, such as transportation, are allocated only in part to households because part of the expenditure is also incurred on behalf of the business sector. The household sector's share in such expenditures can be estimated on the basis of information regarding its utilization (for example, miles driven by households and businesses). The remaining expenditures (such as health) are allocated fully to households.

In the second stage, the expenditures for each functional category are distributed among households. The distribution procedures followed by us build on earlier studies employing the government cost approach [e.g., Ruggles and Higgins (1981)]. Some expenditures such as education, highways, and water and sewerage are distributed on the basis of estimated patterns of utilization or consumption, while others such as public health, fire, and police are distributed equally among the relevant population.

The third part of net government expenditures is taxes. Our objective is to determine the actual tax payments made by households. We do not consider tax incidence in our analysis. Our approach is consistent with the government cost approach. We align the aggregate taxes in the microdata with their NIPA counterparts, as we did for government expenditures. We include only taxes paid directly by households, including federal and state personal income taxes, property taxes on owner-occupied housing, payroll taxes (employee portion), and consumption taxes. Taxes on corporate profits, on business-owned property, and on other businesses, as well as non-tax payments, are not allocated to the household sector because they are paid directly by the business sector.

The fourth component of LIMEW is the imputed value of household production. Three broad categories of unpaid activities are included in the definition of household

production: (1) core production activities, such as cooking and cleaning; (2) procurement activities, such as shopping for groceries and for clothing; and (3) care activities, such as caring for babies and reading to children. These activities are considered as "production," since they can be assigned, generally, to third parties apart from the person who performs them, although third parties are *not* always a perfect substitute for the person, especially for the third activity.

Our strategy for imputing the value of household production is to value the amount of time spent by individuals on the basis of its replacement cost as indicated by the average earnings of domestic servants or household employees (Kuznets, Epstein, and Jenks 1941: 432–433; Landefeld and McCulla 2000). Research suggests that there are significant differences among households in the quality and composition of the "outputs" of household production, as well as the efficiency of housework (National Research Council 2005: ch. 3). The differentials are correlated with household-level characteristics (such as wealth) and characteristics of household members (such as the influence of parental education on childrearing practices). Therefore, we modify the replacement-cost procedure and apply to the average replacement cost a discount or premium that depends on how the individual (whose time is being valued) scores in terms of a performance index. Ideally, the performance index should account for all the factors relevant in determining differentials in household production and the weights of the factors should be derived from a full-fledged multivariate analysis. Given the absence of such research findings, we incorporated three key factors that affect efficiency and quality differentials—household income, educational attainment, and time availability—with equal weights attached to each.

3. The Level of Well-Being in Canada versus the United States

The benchmark years for Canada are 1999 and 2005 and those for the U.S. are 2000 and 2004. We first present comparisons of the level of well-being for Canada in 1999 and the U.S. in 2000 (we call the comparison "around 2000"). The Canadian wealth concept includes a variable called "pension wealth." This is a combination of two types of pension wealth: (1) defined contribution (DC) plans, where individuals have actual retirement accounts such as 401(k) plans and Individual Retirement Accounts (IRAs), as

in the U.S.; and (2) defined benefit (DB) pension wealth, where a formula is used that is based on years of service and earnings history to compute the benefit accruing to individual workers at time of retirement. In the Canadian data, the two types of pension wealth cannot be separated. For comparability with the Canadian data, we have added a measure of DB pension wealth to the U.S. data (see Wolff , 2007, for example, for sources and methods for this estimation). At the moment, we do not have comparable estimates of DB pension wealth for the U.S. in 2004. As a result, our strategy in this paper is to first present a comparison of Canada and the U.S. for around 2000. We then present results on changes over time for the two countries – from 1999 to 2005 in the case of Canada with pension wealth and for the period 2000 to 2004 in the case of the U.S. without pension wealth.

3.1 Level of Well-Being

The picture of economic well-being differs substantially between LIMEW and MI. By construction, MI had average values less than LIMEW (see Table 2). The median value of MI amounted to 57 percent of LIMEW for Canada and 59 percent for the U.S around 2000. Median MI was 14 percent higher in the U.S. than in Canada. Median LIMEW, on the other hand, was 11 percent higher in the U.S.

Table 2 also shows two alternative LIMEW indices. If we strip away household production from LIMEW, we arrive at a measure called *post-fiscal income* (PFI). This measure reflects the effect of net fiscal incidence in an accounting sense; that is, it includes as part of household income all government expenditures incurred on behalf of households (public consumption and transfers), net of tax payments by households. Median PFI was 28 percent greater in the U.S. The larger differential reflects the greater importance of household production in Canada compared to the U.S.

The second alternative measure, called comprehensive disposable income (CDI), shows the effects of stripping away both household production and public consumption from LIMEW. This measure reflects market-based transactions. The differential is even greater than PFI – a ratio of 1.34 between the U.S. and Canada – a reflection of the greater importance of net government transfers (i.e., transfers less taxes) in Canada vis-a-vis the U.S.

Addendum B shows trends in the various measures of well-being in equivalent dollars (that is, adjusted for family size and composition).[5] There is a pronounced narrowing of the differential between the U.S. and Canada. The ratio of equivalent MI now falls to 1.05 from 1.14, and, more importantly, the ratio of median equivalent LIMEW now stands at parity, down from a ratio of 1.11.

Addendum A shows total hours worked. By our calculations, the median Canadian household put in 7 percent fewer hours in total work. The biggest difference was in market work, where Canadian households averaged 11 percent less work time than American households. There was virtually no difference in hours spent in household production.

Figure 1 provides more details on time worked. Results are shown for *mean* annual hours worked by men and women separately. Men and women both worked fewer total hours in Canada than the U.S. – a 12 percent difference in each case. The biggest differential was in market work, where Canadian men worked 17 percent fewer hours than American men and Canadian women 19 percent fewer than American women. Hours spent in household production was also 5 percent less for Canadian men than American men and 7 percent less for Canadian women in comparison to American women.

Just for comparison, we also show differences in real per capita LIMEW and MI around 2000 in Table 2, Addendum C. Here differences are extremely marked with the U.S. enjoying a 31 percent advantage in the former and 28 percent advantage in the latter.

In Panel B of Table 2, we report annual rates of growth of each of the components. In the case of the U.S., rates of growth are computed on the basis of LIMEW *excluding* DB pension wealth.

Median MI and median LIMEW show quite different rates of change over the 2000-2004 period in the case of the U.S. Indeed, median MI fell at an annual rate of 1.0 percent while median LIMEW increased at an annual rate of 0.9 percent. In the case of

[5] The equivalence scale used here is the three-parameter scale employed in the U.S. Census Bureau's experimental poverty measures (Short 2001). The three parameters attempt to take into account the following features of household consumption: on average, children consume less than adults; consumption rises less than proportionately with household size; and the increase in household consumption is generally more when a child is added to a single-person family than when a child is added to a two-person family.

Canada, differences were less marked with the former rising by 1.2 percent per year from 1999 to 2005 and the latter by 0.6 percent per year. Moreover, while median MI increased in Canada over these years, median MI fell in the U.S. In contrast, median LIMEW increased a bit faster in the U.S. compared to Canada. In the case of the U.S., median LIMEW grew faster than either PFI (0.5 percent per year) or CDI (0.33 percent per year). In contrast, in Canada, CDI recorded the highest growth rate, at 1.8 percent per year, followed by PFI at 1.7 percent per year and, lastly, LIMEW at 0.6 percent per year.

MI shows a higher (that is, less negative) rate of growth when an equivalence scale adjustment is applied in the case of the U.S. but there is little difference in the case of Canada. In contrast, median equivalent LIMEW grew slower than median LIMEW in the U.S. while the reverse was true for Canada. Indeed, median equivalent LIMEW showed a slightly higher rate of increase in Canada than the U.S.

By our calculations, there was a noticeable decline in median annual hours worked over the early 2000s in Canada, almost one percent per year, and a more moderate decline in the U.S., 0.3 percent per year. In the American case, this decline was entirely driven by a sharp reduction in hours spent in the labor market, and hours of housework actually increased. In the Canadian case, there was no change in hours of market work and a sharp reduction in hours of housework.

Just for comparison, we also show trends in real per capita GDP, LIMEW, and MI over the same period in Table 2, Addendum C. Between 2000 and 2004, real GDP per capita grew at an annual rate of 1.0 percent in the U.S., more than half a percentage point faster than real per capita LIMEW. Real MI per capita, on the other hand, contracted at an annual rate of 0.6 percent. In the case of Canada, the three measures showed similar rates of growth. GDP per capita and LIMEW per capita grew at 1.8 percent per year, while MI per capita advanced by 2.2 percent per year from 1999 to 2005.

3.2 Composition of LIMEW

The composition of LIMEW by income quintile for the two countries is shown in Table 3. Looking at the last row for each country, we see that LIMEW in the U.S. has a much higher share of income from wealth than does Canada – 25 versus 14 percent. Correspondingly, the importance of household production is much greater in Canada – a

33 percent share versus a 21 percent share in the U.S. The share of base income is slightly higher in the U.S., as is the share of net government expenditures (that is, slightly less negative). There are also differences across quintiles. We see that base income as a share of LIMEW remains flat between the first and fourth quintile and then takes a sharp decline for the top quintile in the case of the U.S., while for Canada, the share generally rises over the quintiles. In both countries, income from wealth rises with LIMEW quintile but the increase is much sharper in the U.S., from an 8 percent share to a 40 percent share, than in Canada, from a 9 percent to a 18 percent share. Net government expenditures as a share of LIMEW decline across quintiles in both countries but in this case the decrease is sharper in Canada, from 19 to -10 percent, than in the U.S., from 15 to -8 percent. This would seem to imply that the fiscal system is more redistributive in Canada than in the U.S. (see below).

With regard to the total population, the most notable change in the U.S during the early 2000s was that net government expenditures as a share of LIMEW rose by 3.6 percentage points. This was largely a reflection of the sharp rise in the federal government deficit over these years, as taxes plunged by $1,290 in 2000 dollars (from 18.2 to 16.6 of LIMEW).[6] The growth in net government expenditures was also facilitated by the growth in transfers and public consumption, though they imparted a smaller boost than taxes. The income from wealth component, in contrast, fell by 2.8 percentage points. This movement largely reflected the bust in financial markets of the early 2000s. The share of base income in LIMEW fell moderately, by 1.2 percentage points, while that of household production showed a small increase of 0.4percentage points.

In contrast, in Canada the share of base income in LIMEW rose by 2.4 percentage points between 1999 and 2005 and that of income from wealth by 1.4 percentage points. The share of net government expenditures showed a modest rise of 0.9 percentage points, and these three increases were offset by a plunge in the share of household production in LIMEW of 4.7 percentage points, which largely reflected a decline in hours spent in housework.

[6] All dollar values for the paper are in 2000 PPP dollars, unless otherwise noted.

It is also interesting to examine how the composition of the LIMEW has changed for households in different parts of the distribution because the relative importance of individual components can vary across the distribution. In the case of the U.S., base income as a share of LIMEW declined among the middle three LIMEW quintiles, showed no change for the bottom, but rose for the top. This change was largely a reflection of the rising earnings inequality over these years. The share of income from wealth fell among all quintiles but most sharply for the top because of the larger importance of this component among the rich. Net government's share in LIMEW rose across the board but the rise was smallest for the bottom quintile. This change largely reflected the fact that tax cuts were higher for upper income groups. The share of household production in LIMEW increased among the bottom four quintiles but fell for the top quintile, as time spent housework declined among higher income families.

In Canada, the pattern of change was substantially different. The share of base income in LIMEW increased much more at the bottom than the top and, indeed, the change fell continuously across LIMEW quintiles. This was due to a decline in earnings inequality in Canada over the years from 1999 to 2005. In contrast the share of income from wealth declined at the bottom and increased at the top and once again changes were continuous across LIMEW quintile. The changes were due to a rise in wealth inequality over these years. The change in the share of net government expenditures was positive for all quintiles while that of household production was negative across the board.

3.3 Sources of Growth of LIMEW Table 4 shows a more detailed breakdown of the components of mean LIMEW around 2000 for the two countries. It is first of note that mean LIMEW was much higher in the U.S., a ratio of 1.30. This compares to a ratio of 1.26 in mean MI and 1.11 in median LIMEW. As might be apparent, these differences reflect the larger degree of inequality in the U.S. compared to Canada. It is also of interest that while base income in dollar terms was 33 percent higher in the U.S. than Canada, income from nonhome wealth was 3.5 times as high in the U.S. This difference reflected the much higher holdings of nonhome wealth in the U.S. In contrast, income from home wealth was substantially lower in the U.S., a ratio of 0.72. Net government expenditures were quite similar in dollar terms between the two countries, though

transfers were slightly higher in the U.S. and public consumption slightly lower (taxes were almost equal). Household production was also 20 percent lower in the U.S., than in Canada. In percentage terms, income from nonhome wealth as a share of LIMEW was much higher in the U.S. (21.7 versus 8.1 percent), income from home wealth much lower (3.6 versus 6.4 percent), and transfers, public consumption, taxes, and household production all higher in Canada (see Panel B of Table 4). Also, as noted earlier, while base income and income from wealth, particularly nonhome wealth declined as a share of LIMEW in the U.S. from 2000 to 2004 and that of transfers and taxes increased, the share of base income and income from wealth in LIMEW rose in Canada from 1999 to 2005 while that of transfers, taxes, and household production declined (Panel C).

Panel D shows the contribution to the overall change in mean LIMEW by component and country during the early 2000s. From 2000 to 2004 mean LIMEW in the U.S. grew by a meager 1.2 percent because of declines in base income and income from wealth. Of this increase, net government expenditures added 3.6 percentage points, while household production played a secondary role, with a contribution of 0.6 percentage points. In Canada, in contrast, mean LIMEW gained a robust 6.7 percent from 1999 to 2005. Of this increase, the biggest contributor by far was base income which accounted for 6.1 percentage points of the overall rise. Income from wealth contributed another 2.4 percentage points and net government expenditures 0.9 percentage points, while household production subtracted 2.8 percentage points from the growth in LIMEW.

3.4 The Middle Class

We define the middle class as the middle quintile of the LIMEW distribution. There are some interesting contrasts between Canada and the U.S. around the year 2000 As shown in Table 5, base income was a much more important share of LIMEW of the middle quintile in the U.S. compared to Canada (59 versus 52 percent). Overall income from wealth made up about 11 percent of LIMEW in the two countries but home wealth was substantially more important in Canada and nonhome wealth in the U.S. Net government expenditures were, surprisingly, more important in the U.S. (7.4 versus 4.9 percent). However, the reason is the higher tax burden of the middle class in Canada. Transfers and public consumption constituted a slightly higher share of the LIMEW of

the middle quintile in Canada but taxes were also much higher than in the U.S. (21.4 versus 16.5 percent). Household production, in contrast, played a bigger role in well-being in Canada than the U.S. (32 versus 23 percent of LIMEW).

LIMEW of the middle quintile gained 3.4 percent in the U.S. from 2000 to 2004 (Table 6). By far the main contributor was net government expenditures, which added 3.8 percentage points. Of this, 2.6 percentage points came from increased transfers, 0.7 points from increased public consumption, and 0.5 points from reduced taxes. Household production added another 2.1 percentage points. Of this, 40 percent came from increased hours of housework and 70 percent from an increased valuation of household time. In contrast, a decline in base income, reflecting falling real wages over the period, subtracted 1.6 percentage points, and declining income from wealth, mainly from home wealth, reduced it by another 0.9 percentage points. In the case of Canada, LIMEW of the middle quintile grew by 4.1 percent from 1999 to 2005. Of this, more than 100 percent, 5.7 percentage points, came from increased base income as real wages rose. Net government expenditures, mainly from rising transfers and public consumption, added another 1.8 percentage points. These rises were offset by a negative contribution of 3.3 percentage points from household production, three quarter of which was due to a reduction in hours of housework and one quarter from a reduction in the unit value of household production.

A comparison is also made with the change in the mean MI of the middle income quintile. In the U.S. MI dropped by 3.9 percent (while LIMEW rose by 3.4 percent). The reduction in MI was attributable to negative contributions of 3.6 percentage points from base income and 1.4 percentage points from income from wealth (that is, property income). These were offset, in part, by a 1.1 percentage-point positive contribution from government transfers. In the case of Canada, MI rose by 7.9 percent from 1999 to 2005 (while LIMEW gained 4.1 percent). The rise in base income once again led the way (with a 7.8 percentage-point contribution), with transfers contributing another 0.8 percentage points and declining property income reducing this by 0.7 percentage points

In sum, according to the LIMEW measure, the public sector was the leading source of middle class well-being growth between 2000 and 2004 in the U.S. while the

growth of base income (notably, labor earnings) led the way in Canada from 1999 to 2005.

4. DEMOGRAPHIC DIFFERENCES IN ECONOMIC WELL-BEING

We next look at disparities in well-being between population groups based on the following characteristics of the household head: marital status, age, and education.[7] We measure these by the ratio of mean values.[8]

4.1 Differences by Marital Status

Both countries show a very high gap in LIMEW between families with a single-female household head ("single females") and families with a married household head ("married couples"), though a smaller gap between families with a single-male household head ("single males") and married couples (see Table 7).[9] Around 2000, single females had an average LIMEW that was 61 percent that of married couples in the U.S. and 62 percent in Canada. The ratio of mean LIMEW between single males and married couples was considerably higher in the U.S., 73 percent, than in Canada, 66 percent.

In the U.S., single females had slightly less than half the base income of married couples, 39 percent the income from wealth, and 51 percent the level of household production. However, single females had 43 percent more on average in government transfers and 34 percent greater public consumption, and paid only 36 percent of the taxes of married couples. In the case of Canada, the base income of single females averaged only 40 percent that of married couples, income from wealth was one third, and household production was 58 percent. On the other hand, as in the U.S., transfers

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[7] In the years prior to 1980, the husband was always designated as the "head" or householder in married-couple families in the Census Bureau surveys in the U.S. Since then, the householder is the person in whose name the housing unit is owned or rented. If it is owned or rented jointly by a married couple, then the householder may be either the wife or the husband.

[8] We prefer to use the mean values rather than median values because it allows us to decompose the difference between subgroups into individual components. However, we will also note the median values where appropriate.

[9] We include only family households in this comparison, thus leaving out households with only one person and households with only unrelated individuals (e.g., roommates or unmarried partners).

received by single females were much higher (34 percent) than that of married couples, public consumption was 15 percent greater, and taxes paid were only 38 percent that of married couples. The relative position of single males in the two countries were also comparable. Single males earned 72-75 percent that of married couples, income from wealth averaged 54-59 percent, and household production 44-54 percent, while transfers and public consumption were a little higher for single males than couples and taxes paid 67 to 74 percent that of couples.

Around 2000, the average LIMEW for single females was lower by $47,900 in the U.S. as compared to married couples (see Panel C). The gap in base income was $36,000, 75 percent of the overall gap. The gap in income from wealth was less, $19,400 or 41 percent of the overall gap. Further, the gap in home production was $13,900 or 29 percent of the gap. On the other side of the ledger, married couples paid, on average, $14,400 more in taxes than single females, and received $3,500 less in the way of transfers and $3,400 less in the way of public consumption. The total net government advantage for single females relative to married couples amounted to $21,400. For Canada, the mean LIMEW for single females was lower by $36,800. The difference in base income amounted to $30,000 or 83 percent of the gap in LIMEW, much higher than in the U.S. The gap in income from wealth was correspondingly lower and accounted for 27 percent of the overall gap, much lower than in the U.S. while the difference in household production explained 38 percent of the overall gap. As in the U.S., transfers and public consumption were higher for single females and the tax burden lower, so that the overall gap in net government spending was $17,300 in favor of single females.

Comparing the disparity in LIMEW between single females and married couples in the two countries, we find that the gap in base income was $5,600 greater in the U.S., that of income from wealth was $9,800 greater in the U.S., but the gap in government transfers in favor of single females was $993 greater in the U.S., that of public consumption $1,900 greater in the U.S., and that of taxes paid was $1,200 greater in the U.S. (see Panel C of Table 7). All told, the gap in net government spending in favor of single females was $4,000 greater in the U.S.

There was no change in the ratio of LIMEW between single females and married couples and that between single males and married couples in the U.S. over the period

from 2000 to 2004 (see Panel D of Table 7). In the case of single females relative to married couples, while the base income, income from wealth, transfers received and public consumption of single females fell relative to married couples and their relative tax burden increased, the household production of the former rose enough relative to married couples to offset these losses. In Canada, there was again virtually no change in the relative level of LIMEW of single females relative to married couples from 1999 to 2005 but the level of LIMEW of single males relative to couples advanced from 0.66 to 0.69. The improvement for single males was due mainly to a relative increase in base income.

4.2 Differences by Age Group

We next examine well-being for elderly versus non-elderly households. It is at first striking that according to LIMEW, the elderly were considerably better off than the non-elderly in the U.S. around 2000, a ratio of 1.13 (see Panel A of Table 8). In contrast, in Canada, the LIMEW of the elderly averaged only 86 percent that of the non-elderly.

In the U.S., the elderly had slightly more than one fourth the base income of the non-elderly but over three times the income from wealth and about the same level of household production. The elderly also had almost five times the amount of government transfers but only about a third the level of public consumption and paid only about 40 percent the taxes. The higher income from wealth of the elderly reflects the fact that the LIMEW includes the annuity value from non-home wealth as income, which is quite high for the elderly owing to a greater amount of accumulated wealth and a shorter remaining life expectancy. Transfers are also much greater for the elderly, reflecting the large share of age-based entitlement programs (Social Security and Medicare) in total transfers. Taxes also fall much more on the non-elderly household than on the elderly because of the former's larger taxable income.[10]

In Canada, the elderly received one-fourth the base income of the non-elderly, about the same ratio as in the U.S., had 1.7 times as much income from wealth, a much lower ratio than in the U.S., and 80 percent the amount of household production. Like the

[10] Most of Social Security income is excluded from taxable income.

U.S., the elderly received much more in the way of government transfers, a ratio of 3.7, but enjoyed a much higher relative level of public consumption (81 percent). Their tax burden relative to the non-elderly was higher than in the U.S., ratio of 47 percent.

Around 2000, the average LIMEW for the elderly in the U.S. was higher than the non-elderly by about $12,000 (see Panel B). The gap in base income was $45,000 in favor of the non-elderly but the gap in income from wealth was less, $35,000 in favor the elderly., while the difference in home production was $1,500 in favor of the non-elderly. The elderly received almost $18,000 more in the way of government transfers than the non-elderly but $6,200 less in public consumption and paid $11,700 less in taxes. The total net government advantage for the elderly relative to the non-elderly amounted to $23,400. In Canada, the mean LIMEW of the elderly relative to the non-elderly was lower by $10,700. The difference in base income amounted to $33,900, lower than in the U.S. The gap in income from wealth in favor of the elderly was $6,600, much lower than in the U.S., while the difference in household production was $5,000, much higher than in the U.S. As in the U.S., transfers were much higher for the elderly than the non-elderly and public consumption less for the elderly (though the gap was much smaller than in the U.S.) The gap in the taxes paid by the elderly relative to the non-elderly were also less than in the U.S., so that the overall gap in net government spending was $21,600 in favor of the elderly, slightly lower than in the U.S.

Comparing the disparity in LIMEW between the elderly and the non-elderly in the two countries, we find that the gap in base income in favor of the non-elderly was $11,000 greater in the U.S., that of income from wealth in favor of the elderly was $28,400 greater in the U.S., and the gap in government transfers in favor of the elderly was $4,400 greater in the U.S (see Panel B of Table 8). However, the disparity in public consumption in favor of the non-elderly was $4,500 greater in the U.S., and that of taxes paid was $1,900 less in Canada. All told, the gap in net government spending in favor of the elderly was $1,800 less in Canada, a very small difference.

There was quite a sharp drop in the ratio of LIMEW (without pension wealth) between elderly and non-elderly households in the U.S. over the period from 2000 to 2004 from 1.07 to 0.99 (see Panel D of Table 7). In contrast in Canada, the ratio increased from 0.86 to 0.91 from 1999 to 2005. In the U.S. the falling ratio could be

traced primarily to a large reduction in the income of wealth (mainly from nonhome wealth) of the elderly relative to the non-elderly from a ratio of 3.0 to 2.5. A secondary contributor was a fall-off in the ratio of transfers received by the elderly relative to the non-elderly from 4.8 to 4.1. In the case of Canada, the improvement of the elderly relative to the non-elderly was due primarily to an increase in the ratio of base income between the two groups from 0.25 to 0.30 and that of household production from 0.80 to 0.89.

4.3 Differences by Educational Group

We next examine well-being by educational group based on the educational attainment of the householder. As shown in Table 9, gaps in well-being based on LIMEW by schooling group are much higher in the U.S. Around 2000, the ratio of LIMEW for the least educated group relative to college graduates was 0.53 in the U.S., compared to 0.66 in Canada,; the ratio between high school and college graduates was 0.64 in the U.S. and 0.76 in Canada; and that between those with some college and college graduates was 0.72 in the U.S. and 0.78 in Canada.

The differences between the two countries can be traced to the steeper gradient of both base income and income from wealth of the lower educational groups relative to college graduates. In the U.S., the ratio of the former increased from 0.26 for the least educated to 0.47 for high school graduates and 0.62 for those with some college, whereas in Canada the respective ratios rose from 0.35 to 0.62 and 0.68. For income from wealth, the ratios rose from 0.41 to 0.57 and 0.62 in the U.S., whereas the ratios were all about 0.60 in Canada.

Transfers received by the lowest education group were almost three times greater than those received by college graduates in the two countries, about 80 percent more for high school graduates in the two counties, and about 40 percent greater for those with some college in the two countries. Mean public consumption showed very little variation across educational groups in both countries. The tax burden faced by less educated groups was also lower in both countries but the gradient was once again steeper in the U.S., with the ratio of average taxes paid relative to college graduates rising from 0.20 to 0.37 and 0.52 in the U.S. and from 0.39 to 0.59, and 0.65 in Canada. Average household

production was also lower for less educated groups but here too the gradient for average household production relative to college graduates was steeper in the U.S., with the ratios rising from 0.51 to 0.62 and 0.72, in the U.S. and from 0.67 to 0.77 and 0.79 in Canada.

Around 2000, the average LIMEW of college graduates in the U.S. was higher than that of high school graduates by $47,000 (see Panel C). Most of this large difference was due to a gap in base income of $45,000. The gap in income from wealth was less, $15,400, while the difference in home production was $10,300. Offsetting these three components were higher transfers for high school graduates, a difference of $4,300, and much lower taxes, a difference of $19,000. The total net government advantage for high school graduates relative to college graduates amounted to $23,600.

In Canada, the mean LIMEW of high school graduates relative to college graduates was lower by $22,400. The difference in base income amounted to $23,300, lower than in the U.S. but more than the full gap. The gap in income from wealth was $6,100, much lower than in the U.S., while the difference in household production was $7,400, somewhat higher than in the U.S. As in the U.S., transfers were higher for high school graduates and taxes paid less. The overall gap in net government spending was $14,300 in favor of high school graduates, quite a bit lower than in the U.S.

Comparing the disparity in LIMEW between the two educational groups in the two countries, we find that the gap in LIMEW in favor of college graduates was $24,600 greater in the U.S. The gap in base income in favor of college graduates was $21,600 greater in the U.S., fully 88 percent of the overall gap in LIMEW, while that of income from wealth was $9,300 greater in the U.S., 38 percent of the overall LIMEW gap. The gap in government transfers in favor of high school graduates was $1,500 greater in the U.S and that of taxes paid was $19,100 greater in the U.S. All told, the gap in net government spending in favor of high school graduates was $9,300 greater in the U.S.

Educational differences in LIMEW widened slightly in the U.S. between 2000 and 2004 (Panel D.) The ratio of LIMEW between the lowest educational group and college graduates fell by 3 percentage points, that between high school graduates and college graduates fell by one percentage point, and that between those with some college and college graduates declined by two percentage points. In contrast, in Canada, the differentials were actually reduced from 1999 to 2005, with the corresponding ratios

increasing by 3, one, and 3 percentage points, respectively. In the U.S., the falling ratios could be traced mainly to widening gaps in income from wealth relative to college graduates and a fall-off in the ratio of transfers received by the less educated relative to college graduates. In the case of Canada, the improvement of the less educated relative to college graduates was due primarily to relative gains in income from both home and nonhome wealth of the less educated groups relative to college graduates.

5. ECONOMIC INEQUALITY.

Economic inequality is much lower in Canada than the U.S. However, whereas the U.S. saw a modest reduction in equality from 2000 to 2004, Canada experienced a modest increase.

We begin the analysis by looking at quintile shares in the two countries around the year 2000 (see Table 10).[11]. The share of total LIMEW received by the top (LIMEW) quintile in the U.S. was 48 percent, compared to only 41 percent in Canada. The shares of the bottom four quintiles were corresponding lower in the U.S. than in Canada. Table 10 also shows quintile shares of MI. Here, too, we see greater inequality in the U.S. but the differences between Canada and the U.S. are less marked than in the case of LIMEW. We also see a reduction of LIMEW inequality in the U.S. from 2000 to 2004, with the share of the top quintile falling by 1.0 percentage points and that of the middle three quintiles gaining. In Canada, in contrast, the share of the top quintile increased by 1.2 percentage points from 1999 to 2005 while those of the bottom three fell.

Gini coefficients for different measures of well-being are shown in Table 11. Around the year 2000, the Gini index for LIMEW was 42.4 in the U.S. but only 34.7 in Canada, a 7.7 point difference. The Gini coefficient in both countries rises when household production is subtracted from LIMEW to yield PFI, reflecting the equalizing effects of household production, and rises again when public consumption is deleted to yield CDI, since public consumption is distributed very progressively. However, differences in Gini coefficients for PFI and CDI between the U.S. and Canada are even

[11] The quintiles of each income measure are defined by ranking households according to that measure. Therefore, in general, a given quintile of the different measures need not be made up of the same households.

greater than those for LIMEW. The Gini coefficient for MI is greater than that of LIMEW in both countries. Compared to LIMEW, MI shows larger inequality because it is a pretax measure and does not take into account government noncash transfers. Moreover, MI also excludes public consumption and household production, which are relatively equally distributed, and, hence, their inclusion in LIMEW lowers LIMEW inequality relative to MI inequality. However, with regard to MI, Canada once again shows lower inequality than the U.S., though the difference in Gini coefficients for MI between the two countries, 5.0 points, is lower than the gap in Gini coefficients for LIMEW.

Table 11 also shows equivalence-scale adjusted measures of LIMEW and MI. The effect of the adjustment is to lower measured inequality in both measures. This is not surprising in light of the well-known correlation that exists in the data between household size and income. The bottom rungs of the income distribution tend to have more single-person households and smaller families than the higher rungs. Additionally, in the case of LIMEW, public consumption and household production display strong positive correlation with household size. Consider, for example, households with school-age children. The single largest component of public consumption is public education, for which we have imputed per-pupil expenditures as a part of LIMEW. Households with more school-age children would, in general, have larger amounts of public consumption allocated to them. Similarly, hours spent on household production also tend to increase with the number of children at home, thus producing a positive correlation between household size and value of household production.[12] However, the inequality of equivalent LIMEW shows a much greater difference between the two countries, 10.0 Gini points, than that of LIMEW. Moreover, the gap in the Gini coefficient for equivalent MI, 6.8 Gini points, is greater than that of MI.

[12] A separate issue concerns the applicability of standard equivalence scales to income measures that include nonmarket components such as public consumption and household production. This is an area that requires further research.

Panel B of the table shows the same set of measures for family households only.[13] As expected, measured inequality is lower for families than all households since single individuals are excluded. However, the difference in inequality between the U.S. and Canada is even more marked on the basis of these family only measures than on the basis of those for all households.

On the basis of the LIMEW measure, the U.S. shows a reduction of inequality between 2000 and 2004 (see Part II of Table 11). The Gini coefficient for LIMEW fell by 0.7 points and that for equivalent LIMEW by 0.9 points. In contrast, in Canada, the Gini coefficient of LIMEW rose by 1.6 Gini points from 1999 to 2005 and that for equivalent LIMEW by 1.7 Gini points. MI shows a different pattern. For the U.S. the Gini coefficient for MI increased by 0.5 points and that for equivalent MI by 0.4 Gini points. These results are similar for Canada, where the Gini index for MI shows a 0.3 point rise and that for equivalent MI a 0.5 point increase.

Other LIMEW measures show somewhat different patterns, particularly for the U.S. In the case of PFI, the Gini coefficient fell by 0.2 points in the U.S. and increased by 1.5 points in Canada, while that for CDI recorded a 0.1 point increase in the U.S. and a 1.3 point rise in Canada. Family household measures all showed either no change or an increase in inequality in the U.S., while, in Canada, they all showed an increase in inequality comparable to those of the corresponding household measures.

Decomposition of inequality by income components (or sources) is a standard technique used to assess the amounts of inequality accounted for by individual components in the alternative income measures. The decomposition results, while not suggesting causality, can serve as a rough guide to the inequality-enhancing or inequality-reducing effects of the constituent components of a measure. To assess the contribution of different components to the changes in inequality of LIMEW, we first decompose the Gini coefficient of LIMEW into the respective amounts of inequality accounted for by each component for all the years. The amount of inequality accounted for by a component is the product of that component's concentration coefficient and

[13] A family household is a household with at least one family. The U.S. Census Bureau defines "family" as a group of two or more persons living in the same household and related to each other by blood, marriage, or adoption.

share in income (Table 12, panel A). The contribution of the components to the difference in the Gini coefficient between two countries was calculated as the difference between the amount of inequality accounted for by that component in the U.S. and Canada (Table 12, panel B).

The contribution of base income to the level of LIMEW inequality is somewhat higher in the U.S. compared to Canada. The lower contribution in Canada reflected both its smaller share of base income in LIMEW and to its lower degree of inequality in the distribution of base income across the LIMEW distribution. The contribution of income from nonhome wealth to the level of inequality was substantially higher in the U.S. than in Canada. Almost all of this could be attributed to the higher share of this component in LIMEW in the U.S. than in Canada.

Base income and income from wealth contributed positively to the gap in LIMEW inequality between the U.S. and Canada. In contrast, net government expenditures had an almost neutral effect. In both counties, net government spending made a negative contribution to LIMEW inequality in that country but the size of the contribution of this component was virtually the same in the two countries. This was also true of the three sub-components of net government spending -- transfers, public consumption, and taxes. The contribution of household production to LIMEW inequality was greater in Canada than the U.S. This difference reflected mainly the larger share of household production in LIMEW in Canada than the U.S. (33 versus 21 percent).

Of the difference in the LIMEW Gini coefficient of 0.077 between the U.S. and Canada, by far the biggest contribution was made by income from nonhome wealth of 0.119. Base income contributed another 0.015 points to the gap, while the net government spending contributed a trivial 0.005 to the gap. Offsetting these were household production, which subtracted 0.057 from the gap between the U.S. and Canada.

Corresponding calculations are also shown for MI. Of the 0.050 gap in the Gini coefficient for MI between the U.S. and Canada, 0.025 or half was contributed by base money income, 0.016 or about a third was contributed by property income, and 0.009, or about a sixth, by transfers.

6. CONCLUSION

There are some important similarities between Canada and the U.S. but some striking differences as well. Our most important finding is that median equivalent LIMEW was at parity between Canada and the U.S. around the year 2000, while the ratio of median MI was 1.05 in favor of the U.S. Moreover, median equivalent LIMEW grew slightly faster in Canada than the U.S. in the early 2000s, so that by the midpoint of the first decade of the twenty-first century Canada was ahead of the U.S. Median total work hours was also less for Canada than the U.S. – a 7 percent difference – as was *mean* total work hours -- a 12 percent difference.

The Gini index for equivalent LIMEW was 38.6 in the U.S. around 2000 and only 28.7 in Canada, a 10.0 point difference. Much of the difference can be traced to the greater importance of income from nonhome wealth in the U.S. The difference in the Gini coefficient for equivalent MI was smaller, a 6.8 point gap. However, while the Gini index for equivalent MI fell by 0.9 points in the U.S. in the early 2000s, it increased by 1.7 points in Canada. Of the difference in the LIMEW Gini coefficient of 0.077 between the U.S. and Canada in 2000, by far the biggest contribution was made by income from nonhome wealth of 0.119

Overall LIMEW in the U.S. had a much higher share of income from wealth in 2000 than did Canada – 25 versus 14 percent. Correspondingly, the importance of household production was much greater in Canada – a 33 percent share versus a 21 percent share in the U.S. The share of base income was slightly higher in the U.S., as was the share of net government expenditures (that is, slightly less negative). The most notable change in the U.S during the early 2000s was that net government expenditures as a share of LIMEW rose by 3.6 percentage points. The income from wealth component, in contrast, fell by 2.8 percentage points, reflecting the bust in financial markets of the early 2000s. In contrast, in Canada the share of base income in LIMEW rose by 2.4 percentage points between 1999 and 2005 and that of income from wealth by 1.4 percentage points. These increases were offset by a plunge in the share of household production in LIMEW of 4.7 percentage points, which largely reflected a decline in hours spent in housework

From 2000 to 2004, mean LIMEW in the U.S. grew by a meager 1.2 percent because of declines in base income and income from wealth. However, net government expenditures added 3.6 percentage points. In Canada, in contrast, mean LIMEW gained a robust 6.7 percent from 1999 to 2005. Of this increase, the biggest contributor by far was base income which accounted for 6.1 percentage points of the overall rise. Income from wealth contributed another 2.4 percentage points, while household production subtracted 2.8 percentage points from the growth in LIMEW.

Base income was a much more important component of LIMEW of the middle quintile in the U.S. compared to Canada (59 versus 52 percent). Overall income from wealth made up about 11 percent of LIMEW in the two countries but home wealth was substantially more important in Canada and nonhome wealth in the U.S. Net government expenditures were, surprisingly, more important in the U.S. (7.4 versus 4.9 percent). Household production, in contrast, played a bigger role in well-being in Canada than the U.S. (32 versus 23 percent of LIMEW). LIMEW of the middle quintile gained 3.4 percent in the U.S. from 2000 to 2004. By far the main contributor was net government expenditures, which added 3.8 percentage points. In contrast, a decline in base income, reflecting falling real wages over the period, subtracted 1.6 percentage points, and declining income from wealth, mainly from home wealth, reduced it by another 0.9 percentage points.

In the case of Canada, LIMEW of the middle quintile grew by 4.1 percentage points from 1999 to 2005. Of this, 5.7 percentage points came from increased base income as real wages rose. This was offset by a negative contribution of 3.3 percentage points from household production. In sum, according to the LIMEW measure, the public sector was the leading source of middle class well-being growth between 2000 and 2004 in the U.S. while the growth of base income (notably, labor earnings) led the way in Canada from 1999 to 2005.

Around 2000, single females had an average LIMEW that was 61 percent that of married couples in the U.S. and 62 percent in Canada. There was virtually no change in the ratio of LIMEW between single females and married couples in the two countries during the early 2000s. According to LIMEW, the elderly were considerably better off than the non-elderly around 2000 in the U.S., a ratio of 1.13. In contrast, in Canada, the

LIMEW of the elderly averaged only 86 percent that of the non-elderly. There was quite a sharp drop in the ratio of LIMEW between elderly and non-elderly households in the U.S. over the period from 2000 to 2004 of 8 percentage points, whereas in Canada the ratio increased by 5 percentage points.

Gaps in well-being based on LIMEW by schooling group are much higher in the U.S. than Canada. Around 2000, the ratio of LIMEW for the least educated group relative to college graduates was 0.53 in the U.S., compared to 0.66 in Canada; the ratio between high school and college graduates was 0.64 in the U.S. and 0.76 in Canada; and that between those with some college and college graduates was 0.72 in the U.S. and 0.78 in Canada. Educational differences in LIMEW widened slightly in the U.S. between 2000 and 2004, while in Canada, the differentials actually reduced from 1999 to 2005.

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Table 1 Components of LIMEW

LIMEW
Money income (MI)
Less: Property income and government cash transfers
Equals: Base money income
Plus: Income from wealth
Annuity from nonhome wealth
Imputed rent on owner-occupied housing
Less: Taxes
Income taxes [1]
Payroll taxes [1]
Property taxes [1]
Consumption taxes
Plus: Cash transfers [1]
Plus: Noncash transfers [1, 2]
Plus: Public consumption
Plus: Household production
Equals: LIMEW

Note: (1) Aligned with the NIPA estimates.

Table 2 Economic Well-Being and Work, Canada and the U.S., Around 2000

	A. Median values in 2000 PPP dollars[1]	
	U.S.	Canada
Levy measures		
LIMEW	71,166	64,391
PFI[2]	54,274	42,483
CDI[3]	45,371	33,806
Official measures		
Money income (MI)	42,000	36,686
Addendum A: Annual hours of work (median values)		
Market work	2,340	2,086
Housework	2,063	2,093
Total	4,749	4,413
Addendum B: Equivalence scale adjustment		
Equivalent LIMEW	93,875	93,655
Equivalent MI	57,095	54,544
Addendum C:		
Real per capita amounts		
LIMEW	36,600	27,850
MI	21,913	17,151

	B. Annual rate of change[4]	
	U.S., 2000-04	Canada, 1999-2005
Levy measures		
LIMEW	0.86	0.64
PFI[2]	0.49	1.69
CDI[3]	0.33	1.75
Official measures		
Money income (MI)	-0.98	1.22
Addendum A: Annual hours of work (median values)		
Market work	-2.90	0.00
Housework	0.73	-1.84
Total	-0.28	-0.91
Addendum B: Equivalence scale adjustment		
Equivalent LIMEW	0.67	0.70
Equivalent MI	-0.81	1.23
Addendum C:		
Real per capita amounts		
GDP[5]	1.00	1.77
LIMEW	0.48	1.81
MI	-0.64	2.22

1. Wealth for Canada and the U.S. both include DB pension wealth in Panel A.
2. PFI equals LIMEW less the value of household production.
3. CDI equals LIMEW less the value of household production and public consumption.
4. Wealth for Canada includes DB pension wealth but wealth in the U.S. excludes DB pension wealth in Panel B.
5. GDP in Constant Prices: Laspeyres (source: Penn World Tables, accessed 3/2/10)

Table 3 Composition of LIMEW by Quintile, U.S. and Canada (around 2000)

Quintiles	Mean LIMEW (in 2000 PPP$)	Total	Base income	Income from wealth	Net government expenditures	Household production
			U.S.			
Lowest	25,888	100	57.4	8.2	14.9	19.5
Second	48,557	100	58.6	9.5	10.4	21.5
Third	71,366	100	58.9	11.0	7.4	22.8
Fourth	101,361	100	58.7	14.7	2.7	24.0
Highest	230,000	100	49.8	39.5	-7.6	18.3
All	95,435	100	54.3	25.2	-0.1	20.6
			Canada			
Lowest	22,156	100	48.6	9.0	19.1	23.3
Second	43,672	100	53.8	10.7	7.5	28.0
Third	64,363	100	51.5	11.6	4.9	32.1
Fourth	88,579	100	50.7	13.4	1.2	34.6
Highest	149,571	100	55.2	18.2	-9.5	36.2
All	73,668	100	52.9	14.4	-0.7	33.3

Note: Wealth for Canada and the U.S. both include DB pension wealth.

Memo: Percentage point change in share

		U.S., 2000-2004			
Lowest	0.0	0.0	-2.5	1.4	1.1
Second	0.0	-3.9	-1.5	4.0	1.4
Third	0.0	-3.5	-1.2	3.4	1.3
Fourth	0.0	-3.9	-1.2	4.5	0.6
Highest	0.0	1.2	-3.9	3.2	-0.4
All	0.0	-1.2	-2.8	3.6	0.4
		Canada, 1999-2005			
Lowest	0.0	6.1	-1.1	0.3	-5.3
Second	0.0	4.3	-0.9	1.2	-4.6
Third	0.0	3.4	-0.4	1.5	-4.4
Fourth	0.0	2.9	0.5	0.6	-4.0
Highest	0.0	0.5	3.4	1.5	-5.4
All	0.0	2.4	1.4	0.9	-4.7

Wealth for Canada includes DB pension wealth but wealth in the U.S. excludes DB pension wealth.

Table 4 Composition of Economic Well-Being, Around 2000
A. Mean values in 2000 PPP dollars

	U.S.	Canada
Base Income	51,843	38,970
Income from wealth	24,088	10,634
Home wealth	3,395	4,699
Nonhome wealth	20,693	5,935
Net government expenditures	-118	-503
Transfers	8,421	7,682
Public consumption	8,242	8,473
Taxes	-16,781	-16,658
Household production	19,623	24,566
Total	95,435	73,668
Addendum:		
Money Income	57,140	45,367

Note: Wealth for Canada and the U.S. both include DB pension wealth.

B. Percent share

	U.S.	Canada
Base Income	54.3	52.9
Income from wealth	25.2	14.4
Home wealth	3.6	6.4
Nonhome wealth	21.7	8.1
Net government expenditures	-0.1	-0.7
Transfers	8.8	10.4
Public consumption	8.6	11.5
Taxes	-17.6	-22.6
Household production	20.6	33.3

Note: Wealth for Canada and the U.S. both include DB pension wealth.

C. Percentage point change in share

	U.S. 2000-04	Canada 1999-2005
Base Income	-1.2	2.4
Income from wealth	-2.8	1.4
Home wealth	-0.5	-0.4
Nonhome wealth	-2.3	1.8
Net government expenditures	3.6	0.9
Transfers	1.6	-0.3
Public consumption	0.4	0.3
Taxes	1.6	-0.9
Household production	0.4	-4.7

Note: Wealth for Canada includes DB pension wealth but wealth in the U.S. excludes DB pension wealth.

D. Contribution to Growth in LIMEW mean value by component (in percentage points)

	U.S. 2000-04	Canada 1999-2005
Base Income	-0.5	6.1
Income from wealth	-2.6	2.4
Net government expenditures	3.6	0.9
Household production	0.6	-2.8
Total	1.2	6.7

Wealth for Canada includes DB pension wealth but wealth in the U.S. excludes DB pension wealth.

Table 5. Composition of LIMEW (Mean values in 2000$) for the 3rd Quintile
A. Mean values in 2000 PPP dollars

	Around 2000	
	U.S.	**Canada**
Base Income	42,009	33,138
Income from wealth	7,850	7,456
Home wealth	2,146	3,966
Nonhome wealth	5,703	3,490
Net government expenditures	5,253	3,123
Transfers	8,607	8,259
Public consumption	8,439	8,627
Taxes	-11,794	-13,763
Household production	16,255	20,646
Total	71,366	64,363

Note: Wealth for Canada and the U.S. both include DB pension wealth.

B. Percent share

Base Income	58.9	51.5
Income from wealth	11.0	11.6
Home wealth	3.0	6.2
Nonhome wealth	8.0	5.4
Net government expenditures	7.4	4.9
Transfers	12.1	12.8
Public consumption	11.8	13.4
Taxes	-16.5	-21.4
Household production	22.8	32.1
Total	100.0	100.0

Note: Wealth for Canada and the U.S. both include DB pension wealth.

Table 6 Contribution of major components to the change in middle class economic well-being (percent)

	United States 2000-2004		Canada 1999-2005	
	LIMEW	**MI**	**LIMEW**	**MI**
Base Income	**-1.6**	**-3.6**	**5.7**	**7.8**
Income from wealth	**-0.9**	**-1.4**	**0.0**	**-0.7**
Home wealth	-0.7	0.0	-0.3	
Nonhome wealth	-0.2	0.0	0.4	
Net government expenditures	**3.8**	**1.1**	**1.8**	**0.8**
Transfers	2.6	1.1	0.9	0.8
Public consumption	0.7	0.0	1.3	
Taxes	0.5	0.0	0.5	
Household production	**2.1**	**0.0**	**-3.3**	
Total	**3.4**	**-3.9**	**4.1**	**7.9**
Addendum: Decomposition of the change in household production (in percent)				
Total change	100.0		100.0	
Contribution to the change from:				
Change in hours	30.9		-75.1	
Change in unit value	69.1		-24.9	

Notes:(1) Wealth for Canada includes DB pension wealth but wealth in the U.S. excludes DB pension wealth. (2) Middle class refers to the third quintile of the measure. The numbers shown in the line labelled "Total" refers to the percent change in the third quintile's average between the two years. (3) Contributions of individual components add up to the total. (4) Unit value of household production equals total value of household production divided by total value of household production.

Table 7 Disparities between Types of Families, U.S. and Canada (around 2000)

A. Mean values in 2000 PPP dollars

	U.S.			Canada		
Mean Values	**Married couple**	**Single female**	**Single male**	**Married couple**	**Single female**	**Single male**
Base Income	69,051	33,066	52,008	50,976	20,626	36,737
Income from wealth	31,604	12,175	18,663	14,490	4,851	7,797
Home wealth	4,637	1,920	2,424	5,829	3,237	4,959
Nonhome wealth	26,967	10,255	16,239	8,661	1,614	2,839
Net government expenditures	-4,335	17,047	4,358	-3,992	13,343	2,849
Transfers	8,147	11,655	8,881	7,434	9,949	7,654
Public consumption	10,120	13,559	10,659	10,015	11,560	11,149
Taxes	-22,602	-8,167	-15,182	-21,441	-8,166	-15,954
Household production	28,062	14,183	15,233	33,049	19,319	14,635
Total	124,382	76,471	90,263	94,524	58,140	62,019

Note: Wealth for Canada and U.S. includes DB pension wealth.

B. Ratio between Singles and Married Couples (around 2000)

	U.S.			Canada		
Mean Values	**Married couple**	**Single female**	**Single male**	**Married couple**	**Single female**	**Single male**
Base Income	1.00	0.48	0.75	1.00	0.40	0.72
Income from wealth	1.00	0.39	0.59	1.00	0.33	0.54
Home wealth	1.00	0.41	0.52	1.00	0.56	0.85
Nonhome wealth	1.00	0.38	0.60	1.00	0.19	0.33
Net government expenditures	1.00	-3.93	-1.01	1.00	-3.34	-0.71
Transfers	1.00	1.43	1.09	1.00	1.34	1.03
Public consumption	1.00	1.34	1.05	1.00	1.15	1.11
Taxes	1.00	0.36	0.67	1.00	0.38	0.74
Household production	1.00	0.51	0.54	1.00	0.58	0.44
Total	1.00	0.61	0.73	1.00	0.62	0.66

Note: Wealth for Canada and U.S. includes DB pension wealth.

Table 7(continued) Disparities between Types of Families, U.S. and Canada (around 2000)

C. Disparities between Single Female-Headed Families and Married-Couple Families by Component (around 2000)

	U.S.	Canada	Canada-U.S.
Base Income	35,984.3	30,350.1	-5,634.2
Income from wealth	19,428.6	9,638.8	-9,789.8
Government Transfers	-3,507.5	-2,514.5	993.0
Public consumption	-3,439.5	-1,545.5	1,894.0
Taxes	-14,434.8	-13,275.7	1,159.0
Household production	13,879.4	13,730.5	-148.8
LIMEW	47,910.5	36,383.7	-11,526.8
Memo: Net government expenditures	-21,381.8	-17,335.8	4,046.0

Note: Wealth for Canada and U.S. includes DB pension wealth.

D. Change in the Ratio between Singles and Married Couples

	United States 2000-2004		Canada 1999-2005	
Mean Values	**Single female**	**Single male**	**Single female**	**Single male**
Base Income	-0.02	-0.05	0.06	0.11
Income from wealth	-0.10	0.10	-0.03	-0.09
Home wealth	-0.03	0.11	-0.07	-0.39
Nonhome wealth	-0.11	0.10	0.02	0.11
Net government expenditures	--	--	-1.74	0.23
Transfers	-0.04	-0.04	-0.07	-0.07
Public consumption	0.06	-0.05	0.06	-0.01
Taxes	0.03	-0.02	0.05	0.10
Household production	0.09	0.00	-0.05	0.03
Total	0.00	0.00	0.00	0.04

Note: Wealth for Canada includes DB pension wealth but wealth for the U.S. excludes DB pension wealth.

Table 8. Elder to Nonelder Disparity, U.S. and Canada (around 2000)

A. Mean values in 2000 PPP dollars

	U.S.			Canada		
	Nonelderly	**Elderly**	**Elderly/ Nonelderly**	**Nonelderly**	**Elderly**	**Elderly/ Nonelderly**
Mean Values						
Base Income	61,172	16,244	0.27	45,408	11,480	0.25
Income from wealth	16,817	51,836	3.08	9,383	15,977	1.70
Home wealth	2,947	5,103	1.73	4,501	5,542	1.23
Nonhome wealth	13,869	46,732	3.37	4,882	10,435	2.14
Net government expenditures	-4,981	18,438	-3.70	-4,602	17,000	-3.69
Transfers	4,691	22,654	4.83	5,112	18,657	3.65
Public consumption	9,532	3,319	0.35	8,798	7,086	0.81
Taxes	-19,204	-7,535	0.39	-18,511	-8,743	0.47
Household production	19,939	18,416	0.92	25,515	20,515	0.80
LIMEW	92,946	104,934	1.13	75,704	64,972	0.86

Note: Wealth for Canada and U.S. includes DB pension wealth

B. Disparities between Elderly and Non-Elderly Households by Component (around 2000)

Mean Values	**U.S.**	**Canada**	**Canada-U.S.**
Base Income	44,928	33,928	-11,000.0
Income from wealth	-35,019	-6,594	28,424.8
Government Transfers	-17,963	-13,545	4,417.6
Public consumption	6,213	1,712	-4,500.7
Taxes	-11,669	-9,768	1,901.2
Household production	1,523	5,000	3,477.0
LIMEW	-11,987	10,732	22,719.8

Note: Wealth for Canada and U.S. includes DB pension wealth

C. Change in the Ratio between Elderly and Non-Elderly Households

	U.S., 2000-2004	**Canada, 1999-2005**
Mean Values		
Base Income	0.03	0.05
Income from wealth	-0.52	0.02
Home wealth	-0.01	0.04
Nonhome wealth	-0.67	-0.10
Net government expenditures	-12.06	-0.87
Transfers	-0.68	0.02
Public consumption	0.00	-0.04
Taxes	0.05	-0.01
Household production	-0.02	0.08
Total	-0.08	0.05

Note: Wealth for Canada includes DB pension wealth but wealth for the U.S. excludes DB pension wealth.

Table 9 Educational Disparities, U.S. and Canada (around 2000)

A. Mean Values in 2000 PPP dollars

	U.S.				Canada			
	Less than HS	HS	Some college	College	Less than HS	HS	Some college	College
Mean Values								
Base Income	22,274	39,465	51,930	84,408	21,865	38,847	42,197	62,175
Income from wealth	14,791	20,546	22,152	35,916	9,589	9,797	9,567	15,911
Home wealth	2,150	3,080	3,248	4,679	4,290	4,336	4,566	6,318
Nonhome wealth	12,641	17,467	18,903	31,237	5,298	5,462	5,002	9,593
Net government expenditures	17,413	5,911	-364	-17,707	10,328	-237	-3,085	-14,584
Transfers	14,784	9,236	6,939	5,051	12,436	6,893	6,014	4,194
Public consumption	8,711	8,097	8,602	7,755	8,308	8,811	8,403	8,230
Taxes	-6,082	-11,422	-15,905	-30,513	-10,417	-15,941	-17,502	-27,008
Household production	13,630	16,644	19,457	26,955	20,932	24,000	24,818	31,309
Total	68,108	82,567	93,176	129,572	62,713	72,407	73,497	94,813

Note: Wealth for Canada and U.S. includes DB pension wealth

B. Ratio between Educational Groups and College Graduates (around 2000)

	U.S.				Canada			
	Less than HS	HS	Some college	College	Less than HS	HS	Some college	College
Mean Values								
Base Income	0.26	0.47	0.62	1.00	0.35	0.62	0.68	1.00
Income from wealth	0.41	0.57	0.62	1.00	0.60	0.62	0.60	1.00
Home wealth	0.46	0.66	0.69	1.00	0.68	0.69	0.72	1.00
Nonhome wealth	0.40	0.56	0.61	1.00	0.55	0.57	0.52	1.00
Net government expenditures	-0.98	-0.33	0.02	1.00	-0.71	0.02	0.21	1.00
Transfers	2.93	1.83	1.37	1.00	2.97	1.64	1.43	1.00
Public consumption	1.12	1.04	1.11	1.00	1.01	1.07	1.02	1.00
Taxes	0.20	0.37	0.52	1.00	0.39	0.59	0.65	1.00
Household production	0.51	0.62	0.72	1.00	0.67	0.77	0.79	1.00
Total	0.53	0.64	0.72	1.00	0.66	0.76	0.78	1.00

Note: Wealth for Canada and U.S. includes DB pension wealth

C. Disparities between High School Graduates and College Graduates by Component (around 2000)

	U.S.	Canada	Canada-U.S.
Base Income	44,943	23,329	-21,614
Income from wealth	15,369	6,114	-9,255
Government Transfers	-4,186	-2,699	1,487
Public consumption	-341	-580	-239
Taxes	-19,091	-11,067	8,024
Household production	10,311	7,309	-3,001
LIMEW	47,005	22,406	-24,599

Note: Wealth for Canada and U.S. includes DB pension wealth

Table 9 (continued) Educational Disparities, U.S. and Canada (around 2000)

D. Change in the Ratio between Educational Groups and College Graduates by Component

	U.S., 2000-2004			Canada, 1999-2005		
Mean Values	**Less than HS**	**HS**	**Some college**	**Less than HS**	**HS**	**Some college**
Base Income	0.00	0.01	0.00	0.03	-0.03	-0.01
Income from wealth	-0.09	-0.05	-0.08	0.19	0.34	0.25
Home wealth	-0.09	-0.10	-0.06	0.09	0.22	0.15
Nonhome wealth	-0.09	-0.04	-0.08	0.26	0.41	0.32
Net government expenditures	-0.71	-0.43	-0.31	-0.18	-0.13	-0.15
Transfers	-0.59	-0.19	-0.11	-0.13	0.20	0.01
Public consumption	0.05	0.01	0.02	0.02	-0.12	0.05
Taxes	0.03	0.04	0.03	0.01	-0.01	-0.01
Household production	-0.01	0.00	0.01	-0.04	-0.06	-0.05
Total	-0.03	-0.01	-0.02	0.03	0.01	0.03

Note: Wealth for Canada includes DB pension wealth but wealth for the U.S. excludes DB pension wealth.

Table 10 Quintile Shares of LIMEW and MI, the U.S. and Canada (around 2000)

A. **Quintile Shares (around 2000)**

	Quintile				
	1	**2**	**3**	**4**	**5**
U.S.					
LIMEW	5.4	10.2	15.0	21.2	48.2
MI	3.6	8.9	14.8	23.1	49.7
Canada					
LIMEW	6.0	11.9	17.5	24.0	40.6
MI	4.4	10.1	16.2	24.2	45.1

Note: (1) Quintiles for each income measure are defined with respect to that income measure. (2) Wealth for Canada and U.S. includes DB pension wealth.

B. **Change in Quintile Shares**

	Quintile				
	1	**2**	**3**	**4**	**5**
U.S., 2000-2004					
LIMEW	-0.1	0.1	0.3	0.6	-1.0
MI	-0.2	-0.2	-0.1	0.2	0.3
Canada, 1999-2005					
LIMEW	-0.3	-0.6	-0.4	0.1	1.2
MI	0.0	-0.1	-0.1	-0.2	0.5

Note: (1) Quintiles for each income measure are defined with respect to that income measure. (2) Wealth for Canada includes DB pension wealth but wealth for the U.S. excludes DB pension wealth.

Table 11 Economic Inequality by Measure, U.S. and Canada (around 2000)

I. Gini coefficient x 100

	U.S.	Canada	Canada-U.S.
A. All Households			
Levy Measures			
LIMEW	42.4	34.7	-7.7
PFI[1]	44.9	34.5	-10.4
CDI[2]	47.9	38.3	-9.6
Official Measure			
MI	46.0	41.0	-5.0
Equivalence scale adjusted measures			
Equivalent LIMEW	38.6	28.7	-10.0
Equivalent MI	44.1	37.3	-6.8
B. Family Households			
Levy Measures			
LIMEW	37.0	27.6	-9.3
PFI[1]	40.2	28.7	-11.4
CDI[2]	44.5	33.0	-11.4
Official Measure			
MI	42.6	35.9	-6.7

Note: Wealth for Canada and the U.S. both include DB pension wealth. (1) PFI equals LIMEW less the value of household production. (2) CDI equals LIMEW less the value of household production and public consumption.

II. Change in Gini coefficient x 100, U.S. and Canada

	U.S., 2000-2004	Canada, 1999-2005
A. All Households		
Levy Measures		
LIMEW	-0.7	1.6
PFI[1]	-0.2	1.5
CDI[2]	0.1	1.3
Official Measure		
MI	0.5	0.3
Equivalence scale adjusted measures		
Equivalent LIMEW	-0.9	1.7
Equivalent MI	0.4	0.5
B. Family Households		
Levy Measures		
LIMEW	0.0	1.1
PFI[1]	0.8	1.6
CDI[2]	1.0	1.5
Official Measure		
MI	0.6	0.5

Note: Wealth for Canada includes DB pension wealth but wealth for the U.S. excludes DB pension wealth.

Table 12 Decomposition of Inequality by Income Source and Income Measure, U.S. and Canada, around 2000 (Gini points)

A. Contribution to Inequality

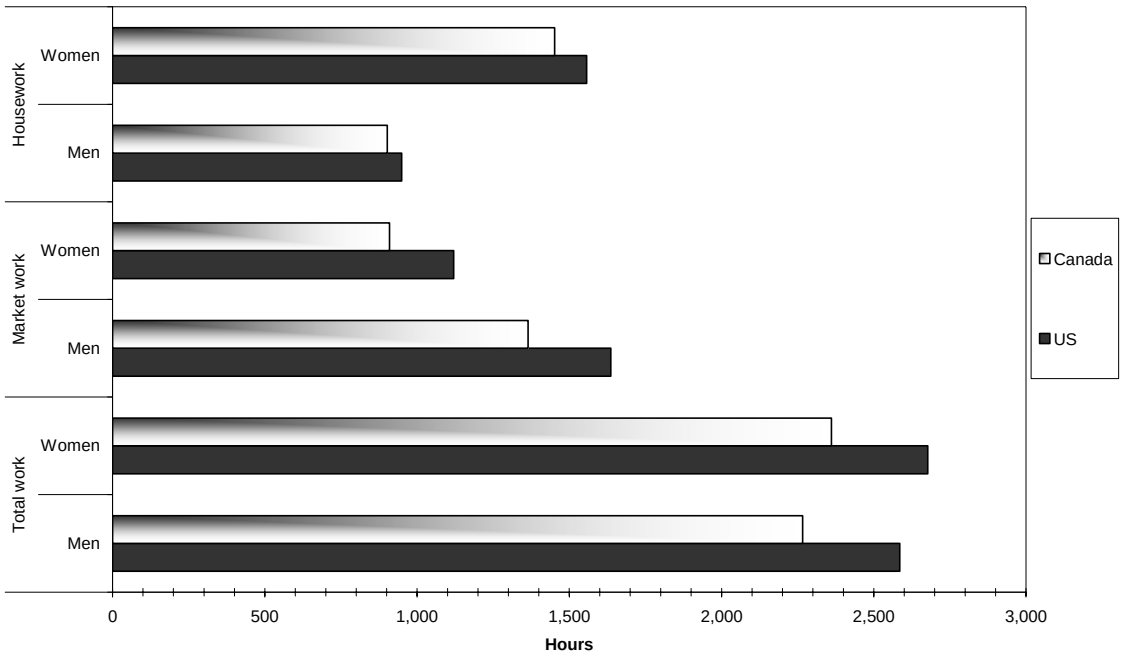
	U.S.	Canada
LIMEW		
Base income	0.207	0.192
Income from wealth	0.181	0.068
Imputed rent	0.017	0.023
Annuities	0.164	0.044
Net government expenditures	-0.042	-0.047
Transfers	0.010	0.006
Public consumption	0.022	0.024
Taxes	-0.074	-0.077
Household production	0.078	0.134
Total	0.424	0.347
Money Income		
Base money income	0.436	0.411
Property income	0.034	0.018
transfers	-0.010	-0.019
Total	0.460	0.410

B. Contribution to the Difference in Inequality (Gini points)

	Canada - U.S.
LIMEW	
Base income	-0.015
Income from wealth	-0.113
Imputed rent	0.007
Annuities	-0.119
Net government expenditures	-0.005
Transfers	-0.004
Public consumption	0.002
Taxes	-0.003
Household production	0.057
Total	-0.077
Money Income	
Base money income	-0.025
Property income	-0.016
transfers	-0.009
Total	-0.050

Note: Wealth for Canada and the U.S. both include DB pension wealth.

Figure 1 Annual Hours of Total Work, Market Work and Housework by Sex, around 2000
(mean values, persons 19 years and older)



APPENDIX: DATA SOURCES AND METHODS

I. The United States

The benchmark years for the United States are 1992, 2000, and 2004. The information required to estimate the LIMEW is not available in a single household survey (see Table 1 for a listing of the components of the LIMEW). Therefore, it was necessary to create a synthetic microdata file for each benchmark year. The sampling frame of the synthetic data files is the March CPS (described as the Annual Demographic Supplement (ADS) in 1992 and the Annual Social and Economic Supplement (ASEC) in 2000 and 2004). In addition to the variables included in the March CPS, the synthetic data file also includes estimates of income from wealth, taxes, noncash transfers, public consumption and the value of household production.

The main steps involved in construction of the 1992, 2000, and 2004 files are shown in Table A1. The first two steps are aimed at transferring wealth amounts from the household wealth survey to the ADS or ASEC. Statistical matching of the CPS and SCF files was completed. In conjunction with the information already available in the ADS or ASEC (age, race and sex) and external information (life expectancy, long-run rates of return on nonhome net worth, and aggregate imputed rent on owner-occupied housing), we calculated income from wealth (Step II).

The quality of match was evaluated by comparing the marginal and joint empirical distribution in the wealth or time use surveys and the statistically matched files. Table A2 provides some details on the quality of the wealth matches conducted for the United States for 1992 and 2004. In Panel A, we present the mean values of the components of net worth in the donor file and the matched file. As indicated by the ratio of the two values, the mean values diverge from each other at most by 3.9 percent. The disparities among population subgroups are also carried over from the original to the matched file with reasonable accuracy (Panel B). For example, the ratio of black to white net worth is .188 in the 2004 SCF and .202 in the matched file. The overall distribution of the net worth in the matched and original data appears to be quite similar as shown by the ratio of the different quantiles of the distribution (Panel C). For example, the 2004 p90 to p50 ratio of net worth in the SCF is 10.408, while in the matched file the same ratio is

10.568. The Gini coefficient in the 1992 SCF is 0.810, while the Gini in the matched file is 0.816.

Steps III and IV are required for generating the value of household production. Statistical matching with the time-use file and the valuation of household production was completed.

Table A3 provides some details on the quality of the time-use matches conducted for 1992 and 2004. In Panel A, we present the mean values of the components of household production in the donor file and the matched file. As indicated by the ratio of the two values, the mean values diverge from each other by less than a tenth of one percent. The disparities among population subgroups are also carried over from the original to the matched file with reasonable accuracy (Panel B). For example, the ratio of female to male average weekly hours of household production is 1.61 in the 2004 ATUS and in the matched file. The overall distribution of weekly hours of household production in the matched and original data appears to be exactly the same for 1992 and only slightly different for 2004 as shown by the ratio of the different quantiles of the distribution (Panel C). For example, the 2004 p90 to p50 ratio of household production hours in the ATUS is 2.845, while in the matched file the same ratio is 2.830. The Gini coefficient in both the 1985 AUTP and the matched file is 0.481.

Steps V through VII were carried out for creating the variables accounting for the flows of purchasing power between the households and government. They involve the estimation of government expenditures incurred on behalf of households—transfers and public consumption—and taxes paid by households.

Finally, estimates of LIMEW have been completed for 1992 and 2004. The progress was in line with our expectations and no revisions were required with respect to data sources or methods that we discussed in our original proposal. Table A4 provides estimates of LIMEW and its major components for the benchmark years.

II. Canada

The Centre for the Study of Living Standards (CSLS) developed estimates for the Levy Institute Measure of Economic Well-being (LIMEW) for Canada in collaboration

with the Levy Institute. Based on data availability, 1999 and 2005 were selected as benchmark years for the LIMEW for Canada.

The information required to estimate the LIMEW is not available in a single household survey (see Table 1 for a listing of the components of the LIMEW). Therefore, it was necessary to create a synthetic microdata file for each benchmark year. The sampling frame of the synthetic data files is the Survey of Labour and Income Dynamics (SLID). In addition to the variables included in the SLID, the synthetic data file also includes estimates of income from wealth, taxes, transfers, public consumption and the value of household production.

The main steps involved in construction of the 1999 and 2005 files are shown in Table A5. The steps described in Lines 1-4 describe the calculation of base income that used the variables available in the SLID, with the exception of fringe benefits which are not included in the SLID. The 1999 and 2005 SLID questionnaire does ask its respondents if their employer offered them supplementary medical insurance, dental insurance, or life/disability insurance. However, these data are not included in the public use microdata files. Unpublished data was obtained from Statistics Canada via special request on the value of these benefits. The latter were assigned to persons based on the size of their workplace and whether they are covered by a collective agreement.[14]

The steps described in Lines 5 through 7 were carried out to obtain estimates of income from wealth. Data on assets and debts reported in Survey of Financial Security (SFS) for 1999 and 2005 were transferred to the SLID via statistical matching. In conjunction with the information already available in the SLID (age and sex) and external information (life expectancy, long-run rates of return on nonhome net worth,[15] and aggregate imputed rent on owner-occupied housing), we calculated income from wealth.

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[14] The probability of receiving fringe benefits is estimated by workplace size and collective agreement coverage status based on the Workplace and Employee Survey. Benefits are then assigned to SLID workers on the basis of these probabilities. Each worker assigned benefits receives the same value of benefits, and non-workers and those not assigned benefits receive zero benefits.

[15] The categories included in the Canadian and U.S. wealth surveys for nonhome wealth are broadly similar with the important exception of pension assets. In the U.S. estimates, we include in the pension assets only the cash surrender value of defined-contribution pension plans. In contrast, in the Canadian estimates, we include, in addition, the imputed value of defined-benefit plans, the most common form of private pension coverage available to the Canadian workers. For perfect comparability, we should have either included the

The quality of match was evaluated by comparing the marginal and joint empirical distribution in the wealth survey and the statistically matched file. Table A6 provides some details on the quality of the wealth matches conducted for Canada for 1999 and 2005. In Panel A, we present the mean values of the components of net worth in the donor file and the matched file. As indicated by the ratio of the two values, the mean values diverge from each other at most by 2.4 percent in 1999 and 11.3 percent in 2005. The disparities among population subgroups are also carried over from the original to the matched file with reasonable accuracy (Panel B). For example, the ratio of single parent to married couple net worth is .276 in the 1999 SFS and .287 in the matched file. The overall distribution of net worth in the matched and original data appears to be quite similar as shown by the ratio of the different quantiles of the distribution (Panel C). For example, the p90 to p50 ratio of net worth in the 2005 SFS is 6.062, while in the matched file the same ratio is 6.461. The Gini coefficient in the 1999 SFS is 0.671, while the Gini in the matched file is 0.673.

Lines 8 through 16 were carried out for creating the variables accounting for the flows of purchasing power between the households and government. They involve the estimation of government expenditures incurred on behalf of households—transfers and public consumption—and taxes paid by households. Estimates have been completed for both benchmark years.

Cash transfers from the government, such as Social Assistance, Old Age Security, Canada Pension Plan benefits, and Employment Insurance benefits, are identified in the SLID. As in the case of the U.S., we aligned the value of government transfers in our estimates to the benchmarks available from the national accounts. Income taxes and the employee portion of payroll taxes[16] are provided in both years of the SLID.

Information on property taxes is drawn from the Survey of Household Spending (SHS), since it is not available in the SLID or the SFS. We calculated the average

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value of defined-benefit plans in our U.S. estimates or omitted their value in the Canadian estimates. However, it is not possible to identify which households have defined benefit plans and which have defined contributions plans in the SFS. The procedure used by Statistics Canada to impute the value of defined benefit plan is also not publicly available.

[16] Payroll taxes in Canada consists of the employee proportion of employment insurance (EI); Canadian Pension Plan or Quebec Pension Plan (CPP/QPP) (the Canadian equivalent of Social Security); and public health insurance premiums.

property tax rate by region in 2005 by dividing the total amount paid in property taxes by households (from the SHS) by the total value of properties (from the SFS) in each region. In 1999, the SFS has a province variable so we calculated average property tax rates the same way, but by province instead of region.

Consumption taxes are not included in any of the surveys. In order to estimate consumption tax rates we requested Statistics Canada to calculate the proportion of income spent on consumption taxes by provinces and disposable income deciles. Statistics Canada calculated this by using the Input-Output Commodity Tax Model associated with their Social Policy Simulation Database and Model (SPSD/M), a microsimulation model used for policy analysis. The commodity tax model calculates the amount households spend on commodity taxes by first calculating the effective tax rate for each tax type and then multiplying the effective tax rate by the amount spent on the category in the database (SPSD). As per our request, Statistics Canada calculated the average amount households spent on commodities taxes in 1999 and 2005, by disposable income (i.e. after income tax) decile and by province. We then divided these amounts by the average disposable income in by deciles and provinces to get the ratio of average tax spent over average income. Then for each household, we multiplied this ratio of average tax spent (in their province and income decile) over average income (in their province and income decile) by household disposable income to obtain the total consumption tax paid by the household.

We then adapted the LIMEW methodology for estimating Canadian public consumption. The additional work in this area involved the distribution of government spending across households. A procedure similar to that used for the U.S. LIMEW was employed. The summary of the allocation and distribution assumptions is provided in Table A7.

The value of household production is indicated in Line 17. Information on time-use was obtained from the 1998 and 2005 rounds of the General Social Survey (GSS). The individuals in the SLID files were statistically matched to the individuals in the GSS to obtain the time spent on household production.

Table A8 provides some details on the quality of the time-use matches conducted for the two years. In Panel A, we present the mean values of the components of

household production in the donor file and the matched file. As indicated by the ratio of the two values, the mean values diverge from each other by at most 1.8 percent in 1999 and 7.1 percent in 2005. The disparities among population subgroups are also carried over from the original to the matched file with reasonable accuracy (Panel B). For example, the ratio of female to male average weekly hours of household production is 1.59 in the 2005 GSS and in the matched file. The overall distribution of weekly hours of household production in the matched and original data appears to be almost exactly the same for both years as shown by the ratio of the different quantiles of the distribution (Panel C). For example, the p90 to p50 ratio of household production hours in the 2005 GSS is 2.810, while in the matched file the same ratio is 2.817. The Gini coefficient in both the 1999 GSS and the matched file is 0.502.

Finally, estimates of LIMEW have been completed for 1999 and 2005. Table A9 provides estimates of LIMEW and its major components for the benchmark years.

Table A1 *Construction of the 1992, 2000, and 2004 files, United States*

Step	Description
I	Statistical matching of the ADS or ASEC and SCF files
II	Estimation of imputed rent and annuity
III	Statistical matching of the ADS and Time-Use files
IV	Estimation of value of household production
V	Alignment of income, payroll and property taxes with the NIPA
VI	Estimation of public consumption
VII	Alignment of transfers with the NIPA
VIII	Estimation of LIMEW

Notes: ADS = Annual Demographic Supplement; ASEC = Annual Social and Economic Supplement; SCF = Survey of Consumer Finances; Time-Use file for 1992 and 2004 are, respectively, the Americans' Use of Time and the American Time Use Survey; NIPA = National Income and Product Accounts.

Table A2 *Quality of the wealth matches, United States 1992 and 2004*

A. Mean values of net worth (in nominal dollars)

	1992			2004		
	SCF	**Matched**	**Ratio**	**SCF**	**Matched**	**Ratio**
Net Worth	$177,582	$178,432	100.48%	$426,603	$420,955	98.70%
Home	$70,209	$69,604	99.14%	$170,475	$167,446	98.20%
Real estate and business	$67,369	$68,145	101.15%	$145,055	$145,673	100.40%
Liquid assets	$21,747	$21,692	99.75%	$37,354	$37,386	100.10%
Financial assets	$29,790	$30,960	103.93%	$89,509	$85,577	95.60%
Retirement assets	$16,835	$16,405	97.44%	$55,870	$55,927	100.10%
Mortgage debt	$22,752	$22,627	99.45%	$59,370	$58,495	98.50%
All other debt	$5,616	$5,747	102.32%	$12,290	$12,559	102.20%

B. Subgroup disparities in wealth (ratio of mean values of net worth)

	1992		2004	
	SCF	**Matched**	**SCF**	**Matched**
Black/White	0.203	0.281	0.188	0.202
Hispanic/White	0.232	0.297	0.218	0.276
Other/White	0.898	0.603	0.681	0.61
Ratio to Married-couple households				
Single Female	0.332	0.296	0.274	0.248
Single Male	0.472	0.418	0.495	0.456
Renter/Owner	0.130	0.099	0.077	0.095
Nonelderly/Elderly	0.629	0.713	0.647	0.716
Ratio to households with more than $100K income				
Less than $20K	0.038	0.035	0.041	0.044
$20K to $50K	0.082	0.072	0.089	0.093
$50K to $75K	0.138	0.159	0.174	0.167

C. Quantile Ratios

	1992						
	p90/p10	**p90/p50**	**p10/p50**	**p75/p25**	**p75/p50**	**p25/p50**	**Gini**
SCF92	-248.372	8.338	-0.034	75.611	3.335	-0.034	0.810
Matched	-255.000	8.331	-0.033	104.180	3.351	-0.033	0.816
	2004						
	p90/p10	**p90/p50**	**p10/p50**	**p75/p25**	**p75/p50**	**p25/p50**	**Gini**
SCF04	-219.945	10.408	-0.005	77.949	3.941	0.051	0.83
Matched	-201.168	10.568	-0.005	99.452	4.005	0.04	0.831

Table A3 *Quality of the time-use matches, United States 1992 and 2004*

A. Average weekly hours of household production

	1992			2004		
	AUTP	**Matched**	**Ratio**	**ATUS**	**Matched**	**Ratio**
Household Production	24.17	24.16	99.97%	24.00	24.00	100.00%
Care	3.34	3.34	99.90%	5.80	5.80	100.00%
Procurement	5.81	5.82	100.10%	4.80	4.80	100.00%
Core	15.02	15.01	99.93%	13.00	13.00	100.00%

B. Subgroup Disparities

	1992		2004	
	AUTP	**Matched**	**ATUS**	**Matched**
Female/Male	1.80	1.80	1.61	1.61
Nonparent/Parent	0.75	0.73	0.63	0.63
Not employed/employed	1.70	1.58	1.33	1.33
Married/Not Married	0.73	0.78	0.64	0.70
Nonelderly/Elderly	0.63	0.71	0.65	0.72

C. Quantile Ratios

	1992						
	p90/p10	**p90/p50**	**p50/p10**	**p75/p25**	**p75/p50**	**p50/p25**	**Gini**
AUTP	14.143	1.800	5.000	3.000	1.500	2.000	0.481
Matched	14.143	1.800	5.000	3.000	1.500	2.000	0.481
	2004						
	p90/p10	**p90/p50**	**p50/p10**	**p75/p25**	**p75/p50**	**p50/p25**	**Gini**
ATUS04	17.167	2.845	6.033	4.325	1.912	2.263	0.517
Matched	17.167	2.830	6.067	4.337	1.907	2.275	0.518

Table A4 *LIMEW and its major components, United States 1992 and 2004 (current dollars)*

	1992	**2004**
Base income	34,235	56,261
Income from wealth	10,152	20,352
Net government expenditures	2,563	3,561
Transfers	6,622	10,944
Public consumption	5,956	9,582
Taxes	10,015	16,965
Household production	13,269	22,131
LIMEW	60,219	102,304

Table A5 *Construction of the 1999 and 2005 files, Canada*

Line No.	Component	Source
1	Base Income = sum of lines 2-4	
2	Earnings	SLID
3	Fringe benefits	Unpublished Statistics Canada data
4	Money income other than earnings and government transfers	SLID
5	Income from wealth = sum of lines 6-7	
6	Annuity from non-home wealth	Statistical matching of SLID and SFS
7	Net imputed rent on housing	Statistical matching of SLID and SFS; aligned with SNA aggregate
8	Government transfers	SLID data aligned with SNA aggregate
9	Public consumption	SLID, SNA and others
10	Taxes	
11	Federal income tax	SLID data aligned with SNA aggregate
12	Provincial income tax	SLID data aligned with SNA aggregate
13	Payroll tax	SLID data aligned with SNA aggregate
14	Consumption tax	Statistics Canada Input-Output Commodity Tax Model
15	Property tax	Tax rates from SHS; home ownership from SLID
16	Net Government Expenditure = lines 8 +9 - 10	
17	Household production	Statistical matching of SLID and GSS; other
18	LIMEW = lines 1 + 5 +16 + 17	

Notes:
SLID = Survey of Labour and Income Dynamics
SFS = Survey of Financial Security
SHS = Survey of Household Spending
SNA = System of National Accounts
GSS = General Social Survey

Table A6 *Quality of the wealth matches, Canada 1995 and 2005*

A. Mean values of net worth (in nominal dollars)

	1999			2005		
	SFS	**Matched**	**Ratio**	**SFS**	**Matched**	**Ratio**
Net Worth	$241,641	$237,970	98.48%	$274,168	$258,564	94.31%
Home	$89,867	$89,356	99.43%	$141,866	$135,893	95.79%
Real estate and business	$63,862	$62,299	97.55%	$102,247	$97,633	95.49%
Liquid assets	$13,016	$12,735	97.84%	$18,003	$16,684	92.67%
Financial assets	$20,351	$19,881	97.69%	$26,290	$23,326	88.72%
Retirement assets	$91,355	$90,366	98.92%	$43,127	$40,571	94.07%
Mortgage debt	$24,686	$24,635	99.79%	$36,701	$36,164	98.54%
All other debt	$12,124	$12,032	99.25%	$20,665	$19,380	93.78%

B. Subgroup disparities in wealth (ratio of mean values of net worth)

	SFS	Matched	SFS	Matched
Ratio to Married-couple households				
unattached	0.320	0.395		
married w/kids	0.729	0.884		
single parent	0.276	0.287		
other	0.875	0.863		
Single Female			0.370	0.352
Single Male			0.351	0.344
Renter/Owner	0.151	0.170	0.078	0.094
Nonelderly/Elderly	0.698	0.778	0.720	0.824
Ratio to University Certificate/Degree				
Less than HS	0.427	0.409	0.539	0.669
HS Graduate	0.548	0.453	0.611	0.784
Non-Univ Cert	0.523	0.452	0.643	0.776
Ratio to households with more than $100K income				
Less than $20K	0.117	0.174	0.118	0.181
$20K to $50K	0.251	0.305	0.299	0.363
$50K to $75K	0.394	0.438	0.374	0.394
$75K to $100K	0.560	0.608	0.469	0.463

C. Quantile Ratios

	1999						
	p90/p10	**p90/p50**	**p50/p10**	**p75/p25**	**p75/p50**	**p50/p25**	**Gini**
SFS99	1592.267	5.533	287.800	19.401	2.741	7.077	0.671
Matched	2145.455	5.599	383.182	21.444	2.783	7.706	0.673
	2005						
	p90/p10	**p90/p50**	**p50/p10**	**p75/p25**	**p75/p50**	**p50/p25**	**Gini**
SFS05	-2018.667	6.062	-333.000	30.207	2.918	10.352	0.730
Matched	*	6.461	*	51.904	3.085	16.826	0.736

* p10 in the matched file for 2005 is $0, while the SFS value is -$300

Table A7 *Allocation and distribution of government consumption and gross investment expenditures, Canada*

Function	Allocation	Distribution
General gov't services	Non-household	
Labour	Household	Population
Protection		
National defence	Non-household	
Courts of law	Non-household	
Correction services	Non-household	
Policing	50:50	Population
Firefighting	50:50	Population
Regulatory measures	50:50	Population
Other	50:50	Population
Transportation and comm.		
Air transport	1/3	Personal expenditure on air, by decile and province
Road transport	Share of road costs	Personal expenditure on gasoline, by decile and province
Public transit	Household	Personal expenditure on transit, by decile and province
Rail transport	Passenger Car Share	Personal expenditure on rail, by decile and province
Water transport	Non-Household	
Telecommunications	Non-household	
Other	Non-household	
Health	Household	Health Costs by Age and Sex, Health Canada
Social services	Household	Household's share of aggregate government transfers to households
Education	Household	
Elementary and secondary education		School aged Child in HH, SLID
Postsecondary education		Member of HH enrolled in PS, SLID
Special retraining services		
Other education		
Conservation & Industry		
Agriculture	Share of agr. Programs	Proportional to farm income
Fish and game	Household	Population

Function	Allocation	Distribution
Oil and gas	Share of energy consumption	Household energy Consumption, by income deciles by province
Forestry	Household	Population
Mining	Non-Household	
Water power	Share of energy consumption	Household energy consumption, by income deciles by province
Tourism promotion	Non-household	
Trade and industry	Non-household	
Other	Non-household	
Environment		
Water	Water use	
Pollution control	Share of GHG emission	Ecological footprint by decile, CCPA
Other	Share of Waste Disposal	
Recreation and culture	Household	By household personal expenditure on Recreation, SHS: RE module
Housing	Household	Receiving Gov't Reduced Rent
Foreign affairs	Non-household	
Regional development	Non-household	
Research establishments	Non-household	
Transfers		
Debt charges	n/a	
Other expenditures	Non-household	

Table A8 *Quality of the time-use matches, Canada 1999 and 2005*

A. **Average weekly hours of household production**

	1999			2005		
	GSS	**Matched**	**Ratio**	**GSS**	**Matched**	**Ratio**
Household Production	23.00	23.00	100.00%	22.00	22.00	100.00%
Care	3.50	3.50	100.00%	3.30	3.20	96.97%
Procurement	5.60	5.50	98.21%	5.30	5.20	98.11%
Core	14.00	14.00	100.00%	14.00	13.00	92.86%

B. **Subgroup Disparities**

	1999		2005	
	GSS	**Matched**	**GSS**	**Matched**
Female/Male	1.71	1.56	1.59	1.59
Nonparent/Parent	0.59	0.59	0.61	0.61
Unemployed/employed	1.40	1.29	1.47	1.42
Married/Not	0.69	0.71	0.62	0.59
Sp. Not Working/Sp. Working	0.69	0.71	0.70	0.70
Ratio to households with more than $100K income				
Less than 20K	1.15	1.05	1.15	0.95
$20K to $50K	1.20	1.09	1.15	1.10
$50K to $80K	1.15	1.05	1.10	1.05
$80K to $100K	1.10	1.00	1.05	1.05

C. **Quantile ratios**

	1999						
	p90/p10	**p90/p50**	**p50/p10**	**p75/p25**	**p75/p50**	**p50/p25**	**Gini**
GSS98	16.167	2.725	5.933	4.333	1.826	2.373	0.502
Matched	16.167	2.740	5.900	4.333	1.836	2.360	0.502
	2005						
	p90/p10	**p90/p50**	**p50/p10**	**p75/p25**	**p75/p50**	**p50/p25**	**Gini**
GSS05	16.857	2.810	6.000	4.457	1.857	2.400	0.538
Matched	16.500	2.817	5.857	4.400	1.878	2.343	0.538

Table A9 *LIMEW and its major components, Canada 1999 and 2005 (in current Canadian dollars)*

	1999	**2005**
Base income	46,155	58,050
Income from wealth	12,921	12,934
Net government expenditures	-602	253
Transfers	9,098	10,665
Public consumption	10,029	12,429
Taxes	19,729	22,841
Household production	29,095	30,088
LIMEW	87,569	101,325