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Public Policies and the Middle Class throughout the World in the Mid 2000s

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PUBLIC POLICY AND THE MIDDLE CLASS IN THE MID 2000s

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"our best grounded expectations of an increase in the happiness of the mass of human society are founded in the prospect of an increase in the relative proportions of the middle parts"
-Malthus, *Second Essay on Population*

1. INTRODUCTION

The purpose of this paper is to update and extend my previous work on how the middle class fares throughout the world. This study, published in the *Journal of Economic Issues* in June 2007 (Pressman 2007), provided a definition of the middle class as well as estimates of the size of the middle class in several nations. It argued that the fraction of households that are middle class across nations and over time is due mainly to government tax and spending policies. The more progressive the national tax system, and the more generous government spending programs, the larger is the proportion of middle-class households.

This work on the middle class was done using the Luxembourg Income Study (LIS) Database, an international database containing extensive income as well as socio-demographic information.[1] LIS databases center around particular years, called "waves". Each wave is around 5 years apart, with Wave #1 beginning in the early 1980s.

For my previous research, data was available only up to Wave #5 (around 2000), and even Wave #5 data was unavailable for some countries. At present, a good deal more

[1] Those interested in more information about the LIS can consult a number of excellent summaries (Smeeding *et al*. 1985; Smeeding, Rainwater, Buhmann & Schmays 1988) or the LIS homepage at www.lisproject.org.

Wave #5 data is available; and some data for Wave #6, which is centered around the year 2004, has come online recently. This provides an opportunity to assess what has happened to inequality and the size of the middle class in the early 2000s.

The early 2000s were a time of slow economic growth in the US and a time of especially slow productivity growth in most of the developed world (Pressman 2009). Also, there was a pronounced trend in the US toward greater inequality as measured by conventional indicators such as the Gini coefficient and the percentage of income going to various deciles of the US population. Several authors have argued that the US middle class was increasingly squeezed by falling incomes and rising debt during the early 2000s (Boushey & Weller 2008; Pressman & Scott 2009; Weller 2008).

The rest of this paper describes the middle class in several different countries during the mid 2000s, and analyzes changes in the size of the middle class in these countries during the first half of the 2000s. The Appendix contains information on the particular year and the original national survey for each LIS dataset used in this paper.

2. THE MIDDLE CLASS IN THE MID 2000s

Unfortunately, there is no official definition of middle class, and no definition that most economists are willing to accept. This paper employs a popular and frequently used notion (see Pressman 2007; Thurow 1985, p. 183), where middle-class households are defined as those households whose *adjusted* household disposable income falls between 75 and 125 percent of median *adjusted* household disposable income. However, not much rides on this decision about how to define the middle class. As we shall see below, using other income ranges to define the middle class changes the size of the middle class in

each nation at a particular point in time, but does not change the broad cross-national and inter-temporal results.

Household income needs to be adjusted to account for differences in household size. An income of $24,000 can support a single individual in the US reasonably well. In 2008, it would have provided more than twice the poverty-level income for a single person. But for a family of 5, an income of $24,000 provides each person with just $4,800 on average. This cannot support the same lifestyle as $24,000 for a single individual; in fact, according to the US Census Bureau, a family of five would have been considered poor with this income in 2008.

One way to deal with household size differences is to treat the income needs of all household members identically and look at per capita household income. But this ignores economies of scale in living arrangements. Two people can live more cheaply together than apart, and will have a higher standard of living by doing so.

In what follows, we adjust household incomes using the EU recommendations regarding equivalence scales for household size. According to this standard, income requirements for children are 50 percent of the requirements of the household head, and income needs for additional adults in the household are 70 percent of the requirements of the household head. These are pretty close to the implicit household adjustments or equivalence scale in the set of poverty lines developed by Mollie Orshanksy (1965, 1969) when she established the official US poverty lines. Since the Orshansky poverty lines came from surveys of food consumption and expenditures for different households, this provides a good empirical foundation for using the EU standards when adjusting income to account for household size. However, not a great deal depends on this decision. Other

adjustment formulae have been suggested and tested, and studies have found that this decision makes little difference to the broad results that one gets when using the LIS (Smeeding, Buhmann & Rainwater 1988); but, obviously, the actual figures will differ.

Table #1 presents estimates on the size of the middle class for all Wave #6 LIS databases available in early 2009. Columns 1 and 2 are consistent with the results of my previous paper on the middle class (Pressman 2007). On average (unweighted), middle-class households comprise between 35 and 40 percent of all households. Individual countries fall into several distinct groupings. The Scandinavian nations of Denmark, Finland, Norway and Sweden have the largest middle class. In these countries, the middle class approaches half of all households. At the bottom is Mexico, followed by the Anglo-Saxon countries—Australia, Canada, the UK and the US. In the four Anglo-Saxon countries, the middle class is close to one-third of the entire population, with Canada and the UK doing a little better and the US and Australia doing a little bit worse. In between the Scandinavian and Anglo-Saxon countries are Taiwan and Luxembourg.

Column 2 of Table #1 looks at the size of the middle class based on factor income-- income before income tax collections and before spending programs that benefit households by providing income that does not come from producing goods and services. It shows that without the government virtually every nation would have a small middle class; and it supports the position (in Pressman 2007) that redistributive fiscal policies are essential for a large national middle class. In particular, there must be generous social benefits, a broad safety net, and a progressive tax structure.

Table #1 also shows that in most cases the size of the middle class does not seem to depend on demographic factors. The proportion of non-elderly households (those

whose head is less than 60 years old), prime-age households (whose head is between 36 and 59 years old), female-headed households, and married couples are all fairly close to the proportion of all middle-class households.

3. HOUSEHOLDS WITH CHILDREN

Only for households with children is there a large difference between the results for all households and the results for a particular sub-group. Households with children are *more likely* to be middle-class households than all households (44 percent versus 38 percent). This increase stems from large differences (around 10 percentage points) in four countries—Australia, Denmark, Finland, and Sweden; however, households with children are more likely to be middle class in all 11 countries in Table #1. One possible explanation for this is the extensive child allowances in these countries. Another possibility is that large alimony and child support payments increase the income of households with children to middle-class levels. Finally, family leave benefits (such as birth grants, wage replacements for new parents and maternity benefits) may be responsible for this result.

To examine these hypotheses, I subtracted these three income sources from household income, and recalculated the percentage of households with children that were middle class. These results appear in Table #2.[2] Column 1 repeats the results from Table #1. The next three columns show the fraction of middle-class households with children after subtracting the income received from child allowances, from alimony and child support, and from family leave benefits, respectively. Then we show the fraction of middle-class households with children after subtracting all three benefits together. The

[2] Mexico and Taiwan are excluded from this table because the requisite data is not available.

final column shows the fraction of *all* households that would be middle class after subtracting out these benefits.

Column 2 shows that in most developed capitalist countries child allowances increase the percentage of households with children that are middle class by 4 to 5 percentage points. The largest increase occurs in Luxembourg, where these transfers increase the fraction of middle-class households with children by nearly 10 percentage points, followed closely by Norway and Sweden, where these transfers increase the fraction of middle-class households with children by around 7 percentage points. In Australia, Denmark and Finland the gain is around 4 to 5 percentage points, and child allowances increase the size of the Canadian middle class and the UK middle class by around 2 percentage points. Unlike most other developed capitalist economies, the US does *not* have a system of child allowances, so this income source cannot bring any households into the middle class (for more on child allowances, see Kamerman & Kahn 1981; Vadakin 1958, 1968).

The US, of course, does provide benefits to households with children through income tax deductions. Yet as we saw in Table #1, the US tax and spending system does very little overall to bring US households into the middle class. This is especially true for households with children. A main reason for this, as I have previously argued (Pressman 1992, 1993), is that low-income and middle-income US households are in low tax brackets. This means that they get back very little from a tax deduction for each child. In addition, many owe little or no taxes. Since tax deductions for children are not refundable for those with no tax obligations, the benefit for many households is close to zero. The lack of an effective policy of child allowances is one big reason the US has such a small

middle class and why such a small fraction of US households with children are middle class compared to other developed nations.

In contrast to child allowances, private transfers between households (child support payments and alimony) have a relatively small impact on the size of the middle class in virtually every country. Only in Denmark and Sweden do these private transfers increase the size of middle-class households with children by more than 1 percentage point. The US, again, appears to do the least of all countries listed on Table #2 in this regard.

Finally, we look at family leave programs that provide income supports to new parents. These benefits are an important source of income to pregnant women and couples with infants for a short period of time, and are given so that they can focus on their children rather than on earning money to survive and support their family. These benefits vary from country to country based on the number of weeks of leave, the percentage of employed women covered, and the replacement rate for wages during maternity leave (see Gornick *et al*. 1996). Column 4 shows that family leave policies also contribute to a larger middle class throughout the world—around 2 percentage points. For Australia, Denmark and Finland, family leave benefits increase the size of middle-class households with children by 1-3 percentage points. For Norway and Sweden the increase is on the order of 5-6 percentage points. Because the UK and US lack extensive family leave benefits (only 25% of employed women are covered in the US and the UK has a very low wage-replacement rate), these benefits have virtually no impact on the size of the middle class for households with children in these countries.

Together, these three types of government expenditure sharply increase the percentage of households with children that are middle class. The gain is 10-15 percentage points for Norway and Sweden, and averages around 7 percentage points for all nations where data is available. The main outliers are the UK, where the increase is only 2.9 percentage points, and the US, where it is only .4 percentage points because the US lacks a child allowance policy or substantial family leave benefits.

Comparing the last column of Table #2 and the first column of Table #1, we can see the impact of all these policies on the size of the middle class overall and not just for households with children. In the Scandinavian countries, Luxembourg, and Australia, these policies increase the size of the middle class around 5 to 10 percentage points. However, in the UK the gain is .7 percentage points, and in the US the gain is only .1 percentage point, mainly because the UK and the US lack broad and comprehensive policies to aid households with children. Such households are left having to rely on child support and alimony payments, as well as tax deductions for children, to bring households with children into the middle class.

In sum, policies such as family allowances and maternity benefits are an important determinant of the size of the middle class. Countries with more generous family allowances and family leave policies have a larger middle class, especially for households with children; countries with meager or no family allowance program, and no program of maternity benefits, have a much smaller middle class.

4. ALTERNATIVE DEFINITIONS OF THE MIDDLE CLASS

Because there is no common definition of the middle class, and because the choice of any income range will be arbitrary to some extent, this section provides a sensitivity analysis of our estimates of the middle class.

Table #3 employs several other income-related definitions of “middle class”. For this table, we use three alternative definitions of “middle class”—(1) household adjusted income between 75 percent and 150 percent of median adjusted disposable income, (2) household adjusted income between 75 percent and 175 percent of median adjusted disposable income, and (3) household income between 75 and 200 percent of median adjusted disposable income. The last range is noteworthy because it is somewhat close to what people report when asked about the income levels necessary to put a family of four in the middle class but far above what most scholars regard as middle-class income levels. According to these survey results most people consider themselves middle class, regardless of their income level. For example, Rose (1983, p. 38-9) found that families with incomes between $15,000 and $100,000 call themselves middle class. Inflating these figures to 2004 dollars (the year of Wave #6 US data), the equivalent incomes are a bit less than $28,500 and a bit less than $190,000. For a family of four (with two adults and two children), a gross income of $190,000 would yield an *adjusted* gross income of close to $72,000, a disposable income of around $135,000, and an *adjusted* disposable household income of around $50,000. In comparison, the median adjusted disposable income for the US in 2004 was a little more than $21,000.

Our sensitivity analysis with these alternative definitions of “middle class” supports our main results. Table #3 shows that how we define “middle class” matters very little and this decision does not drive our results. The size of the middle class varies

across nations in the same pattern for all income ranges. Countries with a relatively large middle class on our main definition also have a relatively large middle class on all our alternative definitions. The Scandinavian nations always have the largest middle class; Mexico and the Anglo-Saxon countries always do worst; and Luxembourg and Taiwan always fall in the middle. It is also worth noting here that the rank order of all countries remains identical on all four definitions, with few and minor exceptions. On our main definition, Denmark has the largest middle class, doing a tiny bit better than Sweden. As we move to broader definitions, Sweden overtakes Denmark by larger and larger amounts. And Canada's middle class surpasses the size of Taiwan's middle class on definitions 3 and 4.

We can conclude from this that our main results on the middle class do not depend on definitional issues. For most reasonable income ranges, countries that do relatively well on one definition also do relatively well on other definitions, and countries that do poorly on one definition also do poorly on other definitions.

5. WHAT HAS HAPPENED TO THE MIDDLE CLASS OVER TIME?

What happens to the middle class is an important question for both economic and political reasons. If the middle class shrank and household incomes rose, this would be a relatively minor issue. We might worry about the consequences of greater income polarization, especially since there is very good evidence that relative incomes matter to people (Frank 1985: Ch. 2, 1999: Ch. 5; Layard 2005); but we would also be happy to see the well-being of many households improve. On the other hand, if middle-class households were moving downward, and becoming lower-class households, this would raise many concerns. For example, we might worry about whether democracy can survive

without a strong middle class and whether economic growth can be sustained without a large middle class.

My 2007 paper showed that in most countries the middle class seemed to be shrinking over time, and that between 1980 and 2000 for each household that left the middle class and moved into the upper class, around two households saw their income fall below middle-class levels. Table #4 extends and updates this analysis. It looks at changes in the size of the middle class and changes in the size of the upper class (defined as those with adjusted disposable income greater than middle-class ranges) in the early 2000s, between Wave #5 and Wave #6.

Several things are noteworthy here. First, middle-class households seem to have done better in the early 2000s than they did in the years from 1980 to 2000. My 2007 paper found that 7 of 11 countries experienced a decline in their middle class during this time period, with an average (unweighted) decline of 1.2 percentage points for all 11 countries. In contrast, between Wave #5 and Wave #6, only 5 of 11 countries saw their middle class shrink and the average (unweighted) change was positive. Moreover, in many cases, the shrinking of middle-class households during the early 2000s was accompanied by an increase in the fraction of upper-class households. This is clearest for the US, where there was a .6 percentage point decline in the middle class but an equal increase in the upper class. Likewise, a 1.3 percentage point drop in the size of the Finnish middle class was nearly matched by a 1 percentage point increase in the upper class; and in Luxembourg the upper class grew by more than the decline in the middle class. Only in Canada do we see the old pattern of a shrinking middle class and a much smaller increase in the upper class.

Nonetheless, there is little to cheer about regarding the condition of the middle class during the last quarter century (from Wave #1 to Wave #6). Of the 5 countries included in my 2007 paper, and also included in this paper, only two (Canada and Norway) saw an increase in the size of its middle class. The .2 percentage point gain from the early 2000s plus the earlier 4.9 percentage point rise, gives us a 5.2 percentage point increase in Norway's middle class. For Canada, a 4 percentage point increase in the size of the middle class between 1980 and 2000 was followed by a 2.1 percentage point decline in the early 2000s. In contrast, over the past quarter century, the middle class fell by 3 percentage points in the US, 1.7 percentage points in the UK, 5.5 percentage points in Sweden, and 4.9 percentage points in Taiwan. Australia is the only other country examined in this paper with LIS data going back to the early 1980s. Its middle class has fallen 1.1 percentage points over the past quarter century.

For the other four countries examined here, data is available only from the middle 1980s to the middle 2000s. But as my earlier analysis showed, most of the decline in the middle class worldwide began in the middle 1980s, rather than in the early 1980s. Of these four countries, the middle class declined in two (Luxembourg by 3.5 percentage points and Finland by 6.7 percentage points) and rose in the other two (Denmark by 5.5 percentage points and Mexico by 1.6 percentage points).

So, despite somewhat better news in the early 2000s, long-term trends have not been good for middle-class households. Given the economic and financial crisis sweeping the world in the late 2000s, future prospects for the middle class appear bleak. Job losses will erode middle-class incomes, and large public debt will make it more difficult for national governments to ameliorate distributional problems in the market economy.

6. THE MAKING OF A MIDDLE-CLASS INCOME

This section seeks to shed more light on the determinants of the size of the middle class by tracing out the main sources of disposable and building a picture of how the middle class changes as a result of adding and subtracting different sources of income gain and loss. Figure #1 provides a simple schema depicting this process.

We start with the wages and salary of the household head. Then we add any wages or salaries from their spouse. Third, we add other earnings as well as other income sources received by the household. This includes earnings from other household members (such as children living at home, or other related adults in the household). It also includes non-wage sources of household income such as rental income, interest income, dividends and royalties. Adding all these other sources of income yields the factor income earned by the household, and is the basis for the factor income data reported in Table #1 and in Table #5.

Next we move from factor income to disposable income. This is done in 4 steps, all of which are shown in Figure #1. First, we add other income earned earned from market activity, but not included in factor income. Mainly, this consists of the pension income of retirees. Adding this to factor income yields market income.

Then we add all social transfer payments to the household made by the government. This includes a wide range of government benefits that fall into two main categories. First, there are social insurance programs that go to all individuals based on some condition other than their income. These benefits include disability insurance payments, maternity leave benefits, military or veterans benefits, and unemployment insurance. It also includes child allowances and family benefits, which we examined in

grater detail in section 3. Second, there are means-tested benefits that the government pays only to those households with low levels of income. These include both cash benefits paid to the household by the government and the value of near-cash benefits such as Food Stamps (in the US), and housing vouchers, which help households pay for necessities.

We next move to gross income by adding two more income sources-- *inter*-household transfers and the value of other income not classified elsewhere. The former include transfers required by the state, such as alimony and child support, as well as voluntary transfers between households, such as parents helping out their children who have just begun living alone. As we will see momentarily, these additions are relatively small for most households, and so have relatively little impact on the size of the middle class.

Then we subtract from gross income (or add to gross income in the case of negative taxes, such as the US Earned Income Tax Credit) taxes paid. The two taxes included in the LIS database and subtracted here are income taxes and payroll taxes. Of course, households pay many other taxes, but these get paid out of disposable income rather than gross income. Subtracting these taxes from gross income yields the disposable income for the household. It is the official LIS definition of disposable income, and the one used in this paper.

Nonetheless, the LIS definition of disposable income excludes several sources of income that probably should be added because this income can be used to support households during the year. This includes realized capital gains, lottery winnings, inheritances, insurance settlements and other lump-sum, one-time income. Moreover,

since most people pay taxes on one-shot income receipts, and since these tax payments are included in disposable income, it makes sense to add this income source when estimating the size of the middle class.

Using this framework, Table #5 provides information about how the size of the middle class changes as we add income sources to the wages of the household head, and subtract taxes.

We start with wages. Looking at just the wages of the household head alone, as well as the household head plus spouse, for most countries the middle class comprises less than 20 percent of all households. The only major exception here is Mexico.

Next we add other income sources from market activity. This includes the wages of other household members as well as other sources of income. These add very little to the size of the middle class for two reasons. First, most households with close to middle-class incomes have few earners in addition to the household head and spouse, and these other individuals add very little to overall household income. Second, unlike affluent households, those close to the middle class do not have a great deal of income from other sources, such as royalties, interest and dividends. As a result, adding these other sources of market income adds very little to the size of the national middle class. Only in Taiwan does factor income (and market income) grow considerably due to other sources of market income. For all other nations (mainly the advanced developed capitalist nations) the picture that emerges from looking at the income received only through market activity is pretty much the same. On average, a bit less than 20 percent of households have a middle-class (adjusted) income; and there is very little variation from one country to another. Somewhat ironically, the US does not do very badly here. Looking at factor

income and market income, its middle class is the fourth largest (rather than the second smallest, as is true of disposable income), falling just a bit below Canada, Luxembourg and Norway.

The two big changes in the size of the middle class come from government tax and spending policy. The spending component is included as we move to the market income plus social transfers column of Table #5. In virtually all developed nations there is a sharp rise in the middle class as a result of government programs that aid the middle class. For some countries, such as the US and Australia, the increase in the size of the middle class due to government transfers is rather moderate—somewhere around 5 to 7 percentage points. In most of the other developed nations, the increase in the size of the middle class is in the double digits. It exceeds 15 percentage points for Denmark, Luxembourg, and Sweden.

We saw in earlier how child allowances and family leave benefits aid families with children and help increase the size of the middle class. But these are just two of many programs available in most developed countries. These programs can be means-tested programs or social insurance programs available to all households. For most middle-class households it is the social insurance programs (such as unemployment insurance, disability insurance, maternity benefits, old-age pensions and child allowances) that are most important. It is both the number and the generosity of these programs that help determine the size of the middle class in each country.

The second big change occurs when moving from gross income to disposable income. Here taxes serve mainly to reduce the size of the more affluent group and by so doing increase the size of the middle class. Tax rates are more progressive in some

nations, and so taxes do more to augment the middle class in some countries than in countries. Among the developed capitalist nations, tax policy adds only around 5 percentage points to the size of the middle class for the UK and the US. By means of contrast, for Denmark, Norway and Sweden the increase is around 15 percentage points.

Finally, the impact of adding one-shot sources of income to disposable income is shown in the last column of Table #5, and provides another measure of the size of the middle class. This adjustment makes little overall difference, mainly because so few households have large lotteries winnings, realized capital gains, or receive large inheritances in any given year. In addition, this income tends to *reduce* the size of the middle class, mainly because this income pushes households into the upper class.

7. AN ANALYSIS OF CHANGES IN THE SIZE OF THE MIDDLE CLASS

This section looks at how a few factors might have affected the size of the middle class over time. It divides these into demographic factors and labor market factors, and uses shift-share analysis to examine the impact of each of these factors.

It is well-known that household income varies due to demographic factors. The wages of those just entering the labor market tend to be lower than those with substantial work experience. Single women with children may not be able to take higher paying jobs with great time and travel responsibilities due to child care costs and obligations. Likewise, households with more children will have more child-rearing responsibilities and so the head of these households will be less able to earn income. Moreover, the additional children increase the household income required to maintain a middle-class lifestyle. As a result, these households are less likely to be middle class. Similarly, married couples have a second adult to send into the labor force in times of need and so

may be better able to maintain a middle-class income than households headed by a single adult.

The overall fraction of the middle class can change as result of changes in the size of key socio-demographic groups within the whole population, while the same fraction of each of these groups remains middle class. If those groups with a large percentage of middle-class households grow, while those with a small percentage of middle-class households shrinks, the middle class will grow based on these demographic shifts. Conversely, the middle class can shrink if groups less likely to be middle class grow while those groups with a larger likelihood of being middle class fall. Shift-share analysis recognizes that the size of the middle class is a weighted average of several different groups; that these groups change over time; and that such changes affect the size of the middle class. It also lets us calculate how much of the overall change is due to changes in the group composition of the whole population as opposed to how much is due to changes within each group.

My 2007 paper found that two demographic changes (age and the gender of the household head) had little or no impact on the size of the middle class between Wave #1 and Wave #5. Table #6 examines how four demographic factors affect the size of the middle class—age, the fraction of female-headed households, the percentage of households that are married, and the number of children in the household. It shows that between Wave #5 and Wave #6 demographic changes also appear to have little effect on the size of the middle class. But there are a few significant exceptions that warrant mention. Only the demographic changes in Taiwan seem responsible for a large part of the decline in Taiwan's middle class between Wave #5 and Wave #6.

In addition to demographic factors, labor market factors may affect the size of a nation's middle class. Several other studies have pointed to the fact that the size of the middle class varies with the business cycle (e.g., Horrigan & Haugen 1988, p. 9). If unemployment is a key determinant of the size of the middle class, we would expect that rising unemployment in one nation would lead to a fall in the size of the middle class as many households lose employment and lose middle-class incomes. My 2007 paper (pp. 190-91) examined this question at the macroeconomic level. It found that changes in the national unemployment rate had little correlation with changes in the size of the national middle class. One possible explanation for this is that generous unemployment benefits make up for income lost due to unemployment. Another possible explanation is that broad macroeconomic variables, such as the national unemployment rate, cannot capture what is going on at the microeconomic level.

The final column of Table #6 examines this issue at a more microeconomic level. It uses LIS microdata on the number of earners and does shift-share analysis to ask how much the middle class changes as a result of changes in the number of earners per household between Wave #5 and Wave #6 (which should change with macroeconomic conditions). We find a small increase in the size of the middle class in Luxembourg and a small decline in the middle class in Taiwan, but little change overall due to the number of earners per household in each country.

We can also examine this question by looking at some labor force variables in LIS datasets—for example, the number of hours worked by household heads and by spouses, the number of weeks worked full-time and part-time by household heads and spouses, or the number of weeks that the head and spouse were unemployed during the year. During

times of unemployment, we would expect to see declines in the number of hours worked and the number of weeks worked full-time during the year. As a result, the middle class should shrink. Unfortunately, such labor market variables are rare in the LIS, and only Finland and the US have relevant data in Wave #6 to perform such an analysis.

My shift-share analysis for Finland found no change in the size of the Finnish middle class as a result of changes in either weeks worked part-time or full-time, or due to weeks unemployed by either the household head or spouse. For the US, there was also virtually no change due to hours worked per week, or due to weeks employed full-time or part-time by either the household head or spouse. In all cases, the results were so small (.1 percentage point or zero) and could have been due to rounding. Only for weeks employed full-time by household heads in the US did this labor market change push up the size of the middle class by .2 percentage points. But this is still not a large change in the middle class stemming from labor market changes. (These results are available from the author upon request.)

7. SUMMARY AND CONCLUSION

This study has used the LIS to examine the size of the middle class across nations and over time. Its main conclusions support the arguments made in Pressman (2007). A main finding is that in the mid 2000s the size of a country's middle class depends to a large extent on the government tax and spending policy. The size of the national middle class is pretty much the same looking at either factor income or market income, and it is also relatively low (less than 20 percent) in all developed countries. Only with generous government transfers and progressive taxes does the middle class grow to close to half the nation's households. This paper expands on my earlier work by identifying the

importance of child allowance programs as well as family leave policies in augmenting the size of the middle class. Another key finding is that our results do not depend on either definitional issues or demographic changes. A final key finding is that middle-class households did not shrink substantially around the world in the early 2000s; and in those nations where the middle class did shrink, this was due to upward mobility more than to downward mobility.

These findings support the work of others who have studied income inequality throughout the world. One main conclusion of this literature is that generous public safety nets and social services result in greater equality (Bradly *et al*. 2003; Moller *et al*. 2003; Western & Healy 1993). These findings also have important policy implications, especially for the US. Simple policy changes, such as converting tax deductions for children into child allowances would be an easy way go to support the US middle class--at little or no cost to the government. A more generous program of child allowances, financed by a small increase in the marginal tax rate paid by those making several hundred thousand dollars a year would go a long way to expanding the size of the middle class in the US. A more generous family leave policy would also help to build the US middle class. Filling in these details, alas, cannot be done here. This must be left for future work.

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TABLE # 1

Middle-Class Households (as a percentage of all households), WAVE #6

COUNTRY	All Households	Based on Factor Income	Non-Elderly Households	Prime-Age Households	Female - Headed Households	Married Couples	Households with Children
Australia	29,1%	15,2%	28,9%	29,4%	27,7%	32,1%	39,4%
Canada	34,9%	18,1%	33,3%	33,1%	33,4%	37,5%	38,5%
Denmark	48,7%	14,1%	47,2%	47,2%	53,1%	46,4%	60,0%
Finland	43,5%	16,7%	41,7%	41,4%	44,7%	46,3%	53,1%
Luxembourg	41,7%	20,2%	38,3%	38,5%	42,5%	44,8%	42,0%
Mexico	24,7%	N/A	25,1%	24,8%	24,9%	24,5%	26,4%
Norway	46,5%	18,0%	44,7%	47,0%	44,6%	50,9%	59,1%
Sweden	48,5%	17,0%	47,7%	47,4%	48,6%	48,3%	58,2%
Taiwan	36,2%	30,5%	38,9%	39,1%	32,4%	36,4%	40,2%
UK	34,8%	14,8%	31,7%	33,0%	36,1%	35,0%	37,6%
US	28,7%	17,7%	29,0%	28,4%	27,8%	30,2%	32,0%
Averages (unweighted)	37,9%	18,2%	37,3%	37,6%	37,8%	39,5%	44,2%

Source: Author's calculations from the Luxembourg Income Study
Note: Middle class is defined as households with between 75% and 125% of median adjusted household income.

TABLE # 2
MIDDLE-CLASS HOUSEHOLDS (AS A PERCENTAGE OF ALL HOUSEHOLDS)

COUNTRY	Middle-Class Households with Children	Middle-Class Households with Children (Subtracting Child Allowances)	Middle-Class Households with Children (Subtracting Alimony and Child Support)	Middle-Class Households with Children (Substracting Family Leave)	Middle-Class Households with Children (Subtracting All Three Payments)	All Middle-Class Households (Subtracting All Three Payments)
AUSTRALIA	39,4%	34,2%	38,6%	36,9%	32,3%	26,7%
CANADA	38,5%	36,4%	37,7%	38,5%	35,7%	34,1%
DENMARK	60,0%	56,5%	57,8%	58,2%	52,2%	46,7%
FINLAND	53,1%	48,6%	52,6%	50,3%	45,5%	41,6%
LUXEMBOURG	42,0%	32,2%	N.A.	42,0%	32,2%	38,6%
NORWAY	59,1%	52,7%	59,0%	53,8%	48,1%	43,4%
SWEDEN	58,2%	53,3%	55,2%	52,8%	45,6%	45,3%
UK	37,6%	35,5%	37,0%	37,5%	34,7%	34,0%
US	32,0%	32,0%	31,6%	32,0%	31,6%	28,6%
AVERAGES (unweighted)	46,7%	42,4%	46,2%	44,7%	39,8%	37,7%

Source: Author's calculations from the Luxembourg Income Study

TABLE # 3
MIDDLE-CLASS (as a percentage of all households) UNDER ALTERNATIVE DEFINITIONS OF MIDDLE CLASS

COUNTRY	MAIN	D2	D3	D4
Australia	29,1%	39,7%	48,2%	53,9%
Canada	34,9%	46,4%	54,0%	59,0%
Denmark	48,7%	62,8%	70,6%	74,1%
Finland	43,5%	56,4%	64,0%	68,4%
Luxembourg	41,7%	53,9%	61,1%	64,9%
Mexico	24,7%	32,1%	38,5%	42,6%
Norway	46,5%	60,9%	67,8%	70,9%
Sweden	48,5%	62,9%	91,9%	95,2%
Taiwan	36,2%	46,8%	53,8%	58,6%
UK	33,8%	45,5%	52,6%	57,6%
US	28,7%	39,0%	46,5%	51,8%
Averages (unweighted)	37,8%	49,7%	59,0%	63,4%

Source: Author's calculations from the Luxembourg Income Study

Note: Main definition is median adjusted household income (median) ± 25% median; D2 = 75% median>median<150% median; D3=75% median>median<175% median; D4=75% median>median<200% median.

TABLE # 4
PERCENTAGE POINT CHANGES IN THE MIDDLE CLASS AND THE UPPER CLASS OVER TIME

COUNTRY	CHANGE IN MIDDLE CLASS WAVE #5 to WAVE #6	CHANGE IN UPPER CLASS WAVE #5 TO WAVE #6
Australia	+.9	-.4
Canada	-2.1	+.4
Denmark	+.1	+.7
Finland	-1.3	+1.0
Luxembourg	-.7	+1.8
Mexico	+2.3	-.8
Norway	+.2	0
Sweden	+1.8	-.4
Taiwan	-.4	+.2
UK	+2.8	-.6
US	-.6	+.6

Source: Author's calculations from the Luxembourg Income Study

TABLE #5
MIDDLE-CLASS HOUSEHOLDS
(As a Percentage of All Households), WAVE #6, ON DIFFERENT INCOME MEASURES

COUNTRY	HEAD WAGES	HEAD PLUS SPOUSE WAGES	FACTOR INCOME	MARKET INCOME	MARKET INCOME PLUS SOCIAL TRANSFERS	GROSS INCOME	DISPOSABLE INCOME	DISPOSABLE INCOME PLUS ONE-SHOT INCOME
AUSTRALIA	16,6%	14,6%	15,2%	15,9%	22,6%	22,9%	29,1%	29,1%
CANADA	18,9%	16,8%	18,1%	20,7%	26,3%	26,6%	34,9%	34,7%
DENMARK	18,8%	14,2%	14,1%	16,0%	33,5%	33,3%	48,7%	48,6%
FINLAND	20,2%	16,3%	16,7%	17,0%	31,7%	31,7%	43,5%	43,2%
LUXEMBOURG	14,0%	17,8%	20,8%	20,2%	35,6%	35,8%	41,7%	41,7%
MEXICO	58,7%	62,4%	N.A.	N.A.	N.A.	N.A.	24,7%	25,9%
NORWAY	18,3%	17,7%	18,0%	19,2%	31,3%	31,2%	46,5%	45,4%
SWEDEN	18,9%	16,6%	17,0%	17,8%	33,7%	33,8%	48,5%	47,2%
TAIWAN	16,4%	17,3%	30,5%	31,0%	32,7%	35,6%	36,2%	36,1%
UK	15,3%	13,5%	14,8%	17,0%	29,2%	29,6%	34,8%	34,8%
US	14,6%	15,8%	17,7%	18,6%	23,3%	23,5%	28,7%	27,7%
AVERAGES (unweighted)	21,0%	20,3%	18,3%	19,3%	30,0%	30,4%	37,9%	37,7%

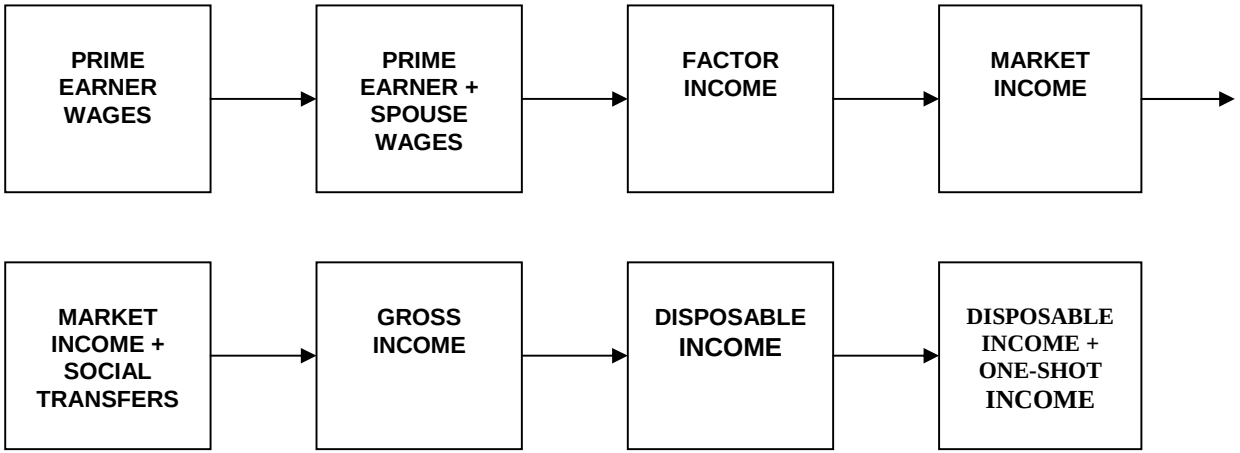
TABLE # 6
SHIFT-SHARE ANALYSIS OF CHANGES IN THE MIDDLE CLASS

COUNTRY	DUE TO AGE	DUE TO GENDER	DUE TO MARITAL STATUS	DUE TO # OF CHILDREN	DUE TO # OF EARNERS
Australia	-.1	0	0	-.1	+.2
Canada	-.1	-.1	-.1	-.2	0
Denmark	+.2	0	0	-.1	-.1
Finland	-.1	0	-.1	-.2	-.1
Luxembourg	+.2	0	0	0	+.3
Mexico	0	0	0	0	+.1
Norway	0	+.1	+.1	0	-.2
Sweden	-.1	0	+.1	+.1	0
Taiwan	-.5	-.1	0	-.4	-.4
UK	0	+,3	0	+,1	0
US	0	0	0	0	-.2
Averages	0,00	0,00	0,00	0,10	0,00

Source: Author's calculations from the Luxembourg Income Study

FIGURE #1

The Movement From Wages to Disposable Income



APPENDIX

COUNTRY	SURVEY
Australia	Survey of Income and Housing Costs, 2001 and 2003
Canada	Survey of Labor and Income Dynamics, 2000 and 2004
Denmark	Income Tax Register, 2000 and 2004
Finland	Income Distribution Survey, 2000 and 2004
Luxembourg	European Community Household Panel (ECHP) for 2000; EU Community Statistics on Income and Living Conditions (SILC) for 2004
Mexico	Household Income and Expenditure Survey, 2000 and 2004
Norway	Income Distribution Survey, 2000 and 2004
Sweden	Income Distribution Survey, 2000 and 2005
Taiwan	Survey of Famly Income and Expenditure, 2000 and 2005
UK	Family Resources Survey, 1999 and 2004
US	Current Population Survey (CPS) - March Supplement, 2000 and 2004