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**The Decline of the Middle Class:
An International Perspective**

Steven Pressman

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Steven Pressman
Department of Economics and Finance
Monmouth University
West Long Branch, NJ 07764
(732 571-3658
pressman@monmouth.edu
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I- INTRODUCTION

A large and vibrant middle class is important to every nation. It contributes to economic growth as well as to social and political stability.

The middle class helps mitigate class warfare. Marx (1948) believed that economic history was a class struggle between haves and have-nots, and that the have-nots would eventually band together and overthrow the capitalist system. What Marx missed was that a middle class might arise and serve as a buffer between the poor and the wealthy.

In addition, a middle class helps democracy flourish. This view goes back to Aristotle (1932, Book IV), who noted that political communities with a large middle class would likely be well-administered and would not be dominated by either of the income extremes. More recently, Thurow (1984) has argued that "a healthy middle class is necessary to have a healthy democracy" because social unrest usually increases when incomes and people become polarized. Barro (1999) has provided empirical support for this view-- countries are more likely to be democratic the higher the share of income going to middle-class families.

Attaining a middle-class living standard also carries with it feelings of success and personal accomplishment. Malthus (1803, p. 594) noted in his second Essay on Population "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". Much recent literature documents the fact that people do care about their relative standing and that relative standing is correlated with subjective assessments of well-being (Frank 1999; Layard 2005).

Finally, a healthy middle class may be necessary for good macroeconomic performance. Henry George (1931, pp. 510ff.) noted that sharp divisions in economic status place an obstacle in the face of development. Separation reinforces differences and prejudices; animosities thus grow, and economies are likely to decline rather than grow. Income inequalities may also reduce consumption, and therefore effective demand and economic growth. For Keynesian or demand reasons we may get both fewer jobs and lower wages, thus leading to a smaller middle class (Brown 2004; Pressman 1997).

Because the middle class is important in so many ways, its decline must be a matter of concern. In the US, during the 1980s many voices expressed such concern. Kuttner (1983) and Steinberg (1983) first drew attention to the fact that the traditional American middle-class family was disappearing; then economic think tanks (Lawrence 1984) and Congress (Belous, LeGrande & Cashell 1985) began to study this issue.

But in the 1990s, as growth rates increased and unemployment rates declined in the US, concern about the fate of the middle class waned. This was especially true during the late 1990s, when a plentiful supply of jobs and rising real wages seemed to make middle-class lifestyles accessible to more families.

Did the 1990s economic boom halt or reverse a middle class

decline in the US? Is a shrinking middle class strictly a US phenomenon with domestic causes, or is a problem that has plagued most of the world economy? If the middle class shrank in the US and in other countries, what has caused this to occur?

This paper will explore these issues. Section II describes previous attempts at defining the middle class. Section III then sets forth several possible causes of the declining middle class--changing demographic factors, structural economic changes, macroeconomic conditions, and a more Keynesian explanation which depends on the importance of government spending. Section IV measures the size of the middle class for a number of countries using the Luxembourg Income Study (LIS). Using the LIS, section V empirically examines some of the explanations for a shrinking middle class set forth in section III. Finally, we conclude with some policy implications.

II- WHO IS MIDDLE CLASS?

One key issue in the debate over the shrinking middle class is how to measure the middle class. Because theory does not tell us who counts as middle class, and cannot tell us who counts as middle class (unless we arbitrarily say the middle class is always the middle third of the income distribution, in which case the middle class can never decline because it is, by definition, always the middle one-third), any definition we choose is going to be arbitrary. But this arbitrariness does not mean that we cannot and should not attempt to define and measure the middle class.

Frank Levy (1983, p. 205f.) notes that "middle class" has three meanings. One meaning is more sociological than economic,

and concerns attitudes and behaviors-- having a good education, a stable career, and resorting to reasoning rather than violence to settle arguments. Taking this approach, sociologists generally try to measure the middle class by a set of behavioral characteristics and socio-economic criteria. The middle class on this view are people who have achieved a certain educational level, whose jobs have a certain level of social status, and who have a particular set of values and attitudes (Coleman & Rainwater 1978).

A second meaning of middle class is an economic one. On this definition, being middle class means having a middle-class standard of living or having an income level that is somewhere in the middle of the income distribution. Virtually all empirical studies in economics have all taken this route and have examined either the percentage of income going to the middle income quintiles or middle 60% of the population (Levy 1988), or some income space around the median level of income (Thurow 1985, 1987; Blackburn & Bloom 1985; Horrigan & Haugen 1988; Davis & Huston 1992). For example, Thurow (1985) defines the middle class as any household with 75 percent to 125 percent of median household income, a definition used in a large number of empirical studies and which will be employed in the empirical work below.

A third approach is to ask people themselves what constitutes a middle-class income. One problem with this approach is that most people think of themselves as middle class, even if they are nearly poor or quite well-to-do. Surveys in the early 1980s found that Americans classify families with incomes of between $15,000

and $100,000 as being middle class (Rose 1983, pp. 38-9). These incomes are roughly equal to $30,000 and $200,000 today, and at the time of these studies would have put households into the middle class if their incomes fell between the 45th and the 99th income percentiles.

III- POSSIBLE CAUSES OF THE DECLINING MIDDLE CLASS

Despite differing definitions of the middle class, different units of analysis (family income versus household income), and different methods of analysis, a majority of previous studies have found that the middle class did decline in the US during the late 1970s and early 1980s (see Belous, LeGrande & Cashell 1985 for a summary).

In general, four factors have been advanced as explanations for the declining middle class: (1) demographic factors, (2) structural or microeconomic factors such as the loss of middle-class manufacturing jobs and the decline of labor unions, (3) macroeconomic factors such as unemployment resulting from the business cycle, and (4) changes in public policy.

A number of studies have cited demographic factors as the main culprit in the declining percentage of middle class families in the US (Bradbury 1986). Unfortunately, there has been little agreement over the important demographic factors at work, and even less agreement that demographic changes are in fact responsible for shrinking the middle class.

Rising divorce rates is one frequently cited demographic culprit (Thurow 1984). When couples divorce, the economic condition of men is usually unaffected while the economic

condition of women frequently deteriorates. Since women earn considerably less than men (for a variety of reasons), and since they are likely to have to support themselves and their children, it is much more difficult for them to achieve middle-class status (Belous, LeGrande & Cashell 1985). Following divorce, a married-couple, middle-class family frequently becomes a middle-class household headed by a man and a lower-class household headed by a woman.

A second possible demographic cause of middle-class decline is the changing age structure of the population. It is well known that incomes rise with age and experience. This follows directly from human capital theory (Becker 1993, Mincer 1974). Lacking experience, young workers tend to have lower earnings. They also have greater wage dispersion (Mincer 1974). However, as people age, their incomes rise and income distribution flattens for each age group. Lawrence (1984) and Levy (1988, pp. 94-9) argue that middle-class decline resulted from demographic forces such as the influx of baby boomers into the labor market. In the 1970s and 1980s young and inexperienced workers came to form a relatively large fraction of household heads because of the baby boom, and these households did not earn enough to make it into the middle class.

The growth of two-earner families may also have contributed to the declining middle class (Blackburn & Bloom 1985, Lerman 1996, Rosenthal 1985). Two individuals with middle-class earnings, who pool their income as a family, are likely to have an upper-class standard of living-- the yuppie couples of the 1980s

and 1990s. This will reduce the size of the middle class while the upper class expands in size.

Changes in the earnings distribution of women, may have made this even worse. In the 1960s and early 1970s the earnings of women were distributed rather equally and this seemed to increase the equality of family earnings (Danziger 1980). But women's earnings have become more unequal since the late 1970s, and there has been a greater tendency for high-income women to marry high-income men (Burtless 1996).

Other studies of the declining middle class have focused less on demographics and more on structural changes affecting the US economy. The authors of these works (Kuttner 1983, Harrington & Levinson 1985, Newman 1988, Thurow 1985) point to the fact that many middle-class jobs in the US disappeared in the 1970s and the 1980s due to changing industrial structures. Many of these jobs were lost as American business firms sought cheaper labor abroad. Generally, it was unionized, industrial jobs that disappeared. They were replaced by clerical and service jobs that did not pay enough to provide middle-class incomes.

Third, macroeconomic conditions might affect income inequality, and therefore the size of the middle class (Budd & Whiteman 1978; Galbraith 1998, 2001). Recessions throw people out of work, exert a downward pressure on wages, and lead to a decline in the number of middle-class families; on the other hand, economic expansions create more jobs, generate higher wages, and enable more families to earn enough money to put them in the middle class. With stagflation plaguing the US economy in the

1970s, and with severe recession and high unemployment in the early 1980s, it is no wonder that the middle class shrank according to this line of argument.

Finally, government fiscal policy has important consequences for income distribution and equality (Saunders 1984; Krelle & Pauly 1978; Levy & Michel 1983; Pressman 2001, 2002). Factor income (income from wages, rents, interest and profits) constitutes only one part of each family's disposable income. Also important are the various public transfer payments that governments make to families as well as the taxes that governments impose on families (or, as in the case of the EITC, negative taxes that governments pay to workers). The more that governments spend on transfer payments, and the more this spending is directed towards low-income and middle-income families, the greater overall income equality will be and the greater the fraction of families classified as middle class.

IV- AN INTERNATIONAL COMPARISION OF THE MIDDLE CLASS

This section will examine some of these hypotheses. It will look at the impact of the age and gender composition of households on the size of the middle class; and it will look at how changes in unemployment and changes in fiscal redistribution affect the size of the middle class. An examination of the remaining hypotheses discussed in the previous section is left for future research.

To see if there has been a middle class decline in the US and elsewhere we employ the Luxembourg Income Study (LIS), an international microdata set containing a large number of income

and socio-demographic variables. The LIS employs common definitions and concepts so that variables are measured according to uniform standards across countries. It currently contains information on 26 countries, mainly covering five different time periods. These periods, or waves, are centered on the years 1980, 1985, 1990, 1995 and 2000. In addition, historical data going back to the 1970s or late 1960s exists for some countries. Data is available for more than 100 income variables and nearly 100 socio-demographic variables.[1]

Table 1 presents data on the size of the middle class in eleven countries using the LIS database. These computations define the "middle class" as those households receiving between 75% and 125% of median adjusted household income,[2] the most commonly used definition in empirical studies of the middle class. The eleven countries listed in Table 1 were selected based on the fact that the LIS currently has data for them for both Wave #1 and Wave #5. (See Appendix 1 for the actual years of each data point plus a list of data sources.)

For Wave #1 a bit less than 40% of all households (unweighted average) could be classified as middle class. Weighted by the

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[1] For more information about the Luxembourg Income Study, and for information on how to access the LIS databases, see Smeeding et al. (1985, 1988) and the LIS homepage at www.lisproject.org.

[2] Adjustments are needed to account for the fact that households are all of different sizes, and thus need different levels of income to achieve middle class status. For example, an income of $25,000 might be sufficient for a single individual to achieve middle class status, but would not be adequate at all for a household with 5 members in it. As a result, incomes must be adjusted by household size in order to compare the living standards of different households based on their income. Adjustments are made by counting children as requiring half the income of a first adult and additional adults as requiring 70% of the income of the first adult to maintain an equivalent standard of living. This assumes fairly significant economic of scale in household consumption. It is also close to the implicit adjustments in the US

number of households in each country, around 35% of all households were middle class. However, the size of the middle class varied considerably from country to country. In three countries (Canada, Israel and the US), less than one-third of all households received middle-class incomes. In other countries (Germany, the Netherlands, Norway and Taiwan) around 41-42% of all households could be classified as middle class. Spain, Switzerland and the UK fall in between these two groups with a bit more than 35% of households receiving middle-class incomes. Finally, in Sweden, more than half of all households were middle class in the late 1970s/early 1980s.

By the end of the 1990s (Wave #5) not a lot had changed. Around 37% of all households were middle class using an unweighted average, and 33.5% of all households were middle class using a weighted average. In addition, the variation from country to country remained large. Three countries once again had relatively small middle classes. Less than one-third of all households were middle class in Israel, the US and the UK. Canada's middle class grew considerably, as did Norway's middle class, while the middle class declined slightly in the Netherlands;[3] so by the end of the 1990s, in all three countries a bit less than 40% of all households were middle class. Sweden, once again, had the largest

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poverty lines and in OECD publications.

[3] The Netherlands saw a sharp drop in the size of the middle class between the late 1980s (Wave #2) and early 1990s (Wave #3). This may be due to the more flexible employment policy that the Netherlands adopted in the 1980s, or it may be due to definitional changes of income in household surveys undertaken by the Netherlands government. Beginning in the early 1990s, imputed rents on owner-occupied housing was counted as part of household income. Like a more flexible employment policy, this definitional change should have led to greater inequality of reported incomes and so a smaller middle class (see

middle class; despite the fact that the Swedish middle class shrunk substantially, it still constituted almost half of all households.

The last column of Table 1 reports the change in the fraction of households classified as middle class between Wave #1 and Wave #5. The average (unweighted) decline in the size of the middle class across all 11 nations was around one percentage point; the weighted decline was closer to 2 percentage points, mainly because of the US (which has nearly half of all households in our set of countries). The decline was very large in three countries (the UK, Taiwan and Sweden) and moderate in two countries (Spain and the US). On the other hand, two countries (Canada and Norway) saw large increases in their middle class.[4]

The US middle class decline of 2.4 percentage points occurred from Wave #1 to Wave #2, just as concerns were being raised about this problem. From Wave #2 onward, there were increases and decreases, but no overall change in the size of the US middle class. There was a somewhat large drop from Wave #3 to Wave #4, but this was reversed in the late 1990s. By 2000, the US middle class was estimated to be 29.3%, exactly the same percentage as in the middle 1980s (Wave #2).

Sweden follows the US pattern, with a sharp decline in the percentage of middle-class households between Wave #1 and Wave #2.

Atkinson & Brandolini 2001).

[4] Using other methods of adjusting for household size and using other definitions of "middle class" (e.g. having a household income between 75% and 200% of median adjusted household income) does not have much impact on the overall results, although the actual numbers will vary. These results are available from the

In contrast, for the UK, the size of the middle class grew from Wave #1 to Wave #2 and then dropped precipitously from Wave #2 to Wave #3 before recovering a bit.

At the other extreme, the middle class in Canada and Norway grew nearly 3 to 4 percentage points between Wave #1 and Wave #5. In both cases, the growth of the middle class was more or less continuous.

Table 2 looks at changes in the size of the upper class (defined as those households whose adjusted incomes exceed median adjusted household income by more than 125%). In conjunction with Table 1, it lets us determine what happened in those countries where the middle class shrank. Was there upward mobility or downward mobility?

The answer falls between these two extremes. There was both upward and downward mobility, but downward mobility exceeded upward mobility by around 2 to 1. In the aggregate, there was a 1 percentage point decline in the middle class and a one-third percentage point increase in the upper class based on unweighted averages, so there was a two-thirds percentage point growth in lower-class households. Based on weighted averages, the results were similar. There was a 2 percentage point decline in the middle class and a two-thirds percentage point increase in the upper class.

In the US, the middle class fell by 2.4 percentage points while the upper class grew by 1 percentage point. This means that the lower class in the US had to grow by 1.4 percentage points,

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author.

slightly more than the growth of the upper class. The three countries with the largest middle class decline also experienced greater downward movement than upward mobility. Taiwan and the UK differ little from the US. In the UK the middle class declined by 4.5 percentage points while the upper class grew by 2.3 percentage point. This means that the class of have-nots grew by 2.2 percentage points. For Taiwan, the upper class grew by 1.9 percentage points as the middle class declined by 4.5 percentage points. In Sweden the split was close to 50-50; the upper class grew by 4 percentage points, while its middle class fell by more than 7 percentage points.

Overall, these results indicate that the larger part of middle-class shrinkage was due not to improvements in economic well-being, as several authors have contended (Horrigan & Haugen 1988; Burkhauser et al. 1996). Rather, in the US and other developed countries the largest portion of the decline in the middle class was due to worsening economic conditions of households. These results point not to rising incomes and affluence, but to greater income polarization.

V- WHY HAS THE MIDDLE CLASS DECLINED IN SOME COUNTRIES BUT NOT OTHERS?

This section examines some of the explanations for a shrinking middle class discussed in section III. In particular, it looks at two demographic factors (the age and gender composition of households) and two economic factors (unemployment and changing fiscal policy).

Table 3 lets us examine whether demographic factors can be

held responsible for the dwindling middle class in the US and other countries. The computations in this table were derived by using shift-share analysis.

Shift-share analysis lets us see what would have happened to the size of the middle class had there been no demographic changes at all between Wave #1 and Wave #5. It does this by first recognizing that the overall size of the middle class is just the weighted average of several demographic groups times the percentage of each group falling into the middle class. We can use the LIS to calculate the percentage of some demographic group falling within the income boundaries of the middle class. We can then compute the total percentage of middle-class households in one country at one time as a weighted average of the percentage of middle-class households for different demographic groups, using the size of each group (relative to the whole population) as weights that determine the overall percentage of middle-class households. Our shift-share analysis employs the old demographic distributions, and calculates the size of the middle class with these old distributions. If the fall in the middle class is due to demographic changes, we should see smaller declines in the relative size of the middle class (or maybe even an increase in its size) when demographic factors are kept constant. Larger actual declines would thus be the result of changing demographics, and so demographics can be identified as causing middle class shrinkage.

Table 3 shows the results of this analysis. The second column of Table 3 reproduces the last column of Table 1. The

third column shows how the middle class would have changed had the age distribution of the population in each country not changed between Wave #1 and Wave #5. For the purposes of our shift-share analysis, households were divided in five age groups based on the age of the head of household (under 30, 30-39, 40-49, 50-59, and 60 and above). Column 4 shows the decline of middle class if there had there been no change in the gender composition of households. Here, we divide households into two groups: female-headed households (with a single female adult heading up the household) and all other households.

It should be clear from Table 3 that these two demographic factors are not responsible for the decline in the middle class throughout the world. On average (unweighted), the middle class was actually 1.1 percentage point smaller. Had the age distribution of the population not changed, the decline would have been 1.3 percentage points. Using weighted averages, the results are similar. Had the age distribution not changed, the middle class would have been even smaller and declined even more than it actually did. Thus, a changing age distribution possibly mitigated middle-class shrinkage by a tiny bit; it cannot be held responsible for the declining fraction of middle-class households.

What is true in the aggregate is true, pretty much, on a country by country basis. Most interesting are the three countries with the greatest middle-class declines. All were pretty much unaffected by changes in the age distribution of its

population. The same thing is true for the US,[5] as well as for the large increases in the size of the middle class in Canada and Norway. These changes all would have been pretty much the same had there been no change in the age structure of the population between the early 1980s and the turn of the twenty-first century.

Table 3 also shows that the changing gender composition of households did not adversely affect the size of the middle class. The actual middle-class decline was 1.1 percentage point (unweighted average), and the decline also would have been one percentage point had the gender distribution of households not changed. Taking weighted averages, the declines are an identical 1.8 percentage points. So, the gender composition of households had virtually no impact on the size of the middle class.

And again, what is true in the aggregate is also true on a country by country basis. In every country the changing gender composition of households either had no effect on the size of the middle class, or the effect was extremely small (a few tenths of a percentage point).

We now move on to examine the impact of macroeconomic factors on the size of the middle class. Table 4 looks at one macroeconomic explanation of a declining middle class-- the relationship between changes in the national unemployment rate and changes in the size of the middle class. If macroeconomic conditions affect the size of the middle class, it should work through lower unemployment rates leading to more jobs and higher

[5] This is consistent with the work of Karoly (1996), who finds that demographic changes in the US, such as changes in the age and education level

incomes, thus moving more households from the lower income class to the middle class.

The data in Table 4 provide little evidence that changing unemployment affects the size of the middle class. In the aggregate, the unemployment rate increased most between Wave #1 and Wave #2, nearly 2 percentage points using both weighted and unweighted averages. Yet, the middle class did not shrink the most over this time period. Conversely, the unemployment rates fell most between Wave #4 and Wave #5. However, there is no indication that the middle class grew substantially, as the macroeconomic explanation would have us expect. There was a small increase based on a weighted average and a decline based on an unweighted average. In both of these cases, there was only a small change in the size of the upper class; so most of the action in these time periods occurred between lower and middle classes. Only the changes from Wave #3 to Wave #4 provide some support for the macroeconomic explanation of a falling middle class. As unemployment rose by around 1 percentage point, the middle class on average shrank. But even here, the support is rather weak because from Table 2 we see that growth of the upper class rather than growth of the lower class explains why the middle class declined in size. If rising unemployment was the culprit, then we should have seen the lower class growing (for reasons noted earlier in the paper) as unemployment increased.

On a country by country basis, there is also little support for the view that changes in the unemployment rate have affected

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of the population in the 1970s and 1980s tended to reduce income inequality.

changes in the size of the middle class. The UK, for example, experienced a very large increase in unemployment from Wave #1 to Wave #2 (British unemployment soared from 3.9 percent to 10.9 percent). But at the same time, its middle class grew by 1.7 percentage points. In contrast, between Wave #2 and Wave #3, British unemployment declined from 10.9 percent to 8.1 percent at the same time that the middle class shrank by 8.6 percentage points.

Even Sweden, which provides some support for this macroeconomic explanation, ultimately fails to demonstrate any clear relationship between changes in the size of the middle class and changes in the rate of unemployment. Between Wave #1 and Wave #2 Swedish unemployment rose a bit while the middle class shrank considerably. Between Wave #2 and Wave #3 Swedish unemployment rose even more. While the middle class again declined, the decline here is quite small (.8 percentage point compared to 5.4 percentage points between Wave #1 and Wave #2). But it is the changes occurring between Wave #3 and Wave #4 that really provide a Swedish counterexample to the macroeconomic explanation of middle class decline. In the early 1990s, Swedish unemployment soared. Yet over the same time period there was a substantial increase in the size of the Swedish middle class.

Then there is the Netherlands, the only country whose unemployment rate fell between Wave #1 and Wave #4. Moreover, it fell a substantial 9.5 percentage points. But while jobs were being added, households were not moving into the middle class. Just the reverse! From Wave #1 to Wave #4 the Dutch middle class

shrank by more than 2 percentage points.

We can conclude from this that macroeconomic conditions do not seem to affect the size of the middle class. If anything, it seems that there may be some sort of reverse causation working--in order to get jobs, people must be willing to work for less money. This lower income, in turn, threatens to remove households from the middle class.

Finally, we turn to the relationship between fiscal policy and the middle class. To get a handle on this issue, we look at what things would have been like without the government affecting household incomes. Table 5 does this by looking at the size of the middle class when defined solely in terms of factor incomes earned in the market. Here middle class households are those whose adjusted factor incomes fall between 75% and 125% of median adjusted factor income. It assumes no private transfers between households (which are small in the aggregate), no government transfers to households, and no taxes imposed on factor incomes.

Comparing Table 5 with Table 1, several things become clear. First, the middle class would have been much smaller in every nation without the impact of government spending and taxes. It should be pointed out that this is not the result of just including fewer income sources in household income. Since our definition of middle class is a relative one, and since all households lose government benefits, the striking results of Table 5 reflect the distributional impact of fiscal policy on income distribution. Second, without government fiscal policies, the size of the middle class would have declined substantially more

than it actually fell. In the aggregate, the decline would have been more than 4 percentage points rather than around 1 percentage point. The impact of government fiscal policy on the size of the middle class is quite remarkable in a number of countries. In Canada and Germany, large declines in the factor income middle class (nearly 6 percentage points) became increases in the size of the disposable income middle class. In the UK, a decline of more than 10 percentage points in the factor income middle class became a decline of 4.5 percentage points based on disposable income.

In terms of factor incomes the US saw a substantially below average decline in the middle class, despite having a relatively large decline in the middle class when looking at disposable incomes. And US fiscal policies seemed to have no impact at all on the size of the middle class. Without government, the size of the US middle class would have fallen by 2.4 percentage points. But taking government spending and taxes into account the US middle class actually declined by 2.4 percentage points.

Finally, Table 6 examines whether these last results primarily stem from government social security and retirement programs for the elderly. Since the elderly are less likely to work, their factor incomes tend to be low; they tend to survive on social security (a government transfer) and the interest on their savings (part of factor income) more than on earned income. Where savings accumulations are small, retirement income is necessary to ensure a middle-class standard of living.

The figures reported in Table 6 were derived by looking at only those households whose heads were less than 60 years old (and

thus unlikely to receive retirement transfers). The second and third columns of Table 6 show the percentage of non-elderly households with middle-class (disposable) incomes for Wave #1 and Wave #5. The figures show small declines in the size of the middle class on average. At the other extreme, and consistent with results from Table 1, the UK and the US experienced the largest declines in the size of the middle class (9.5 percentage points and 6.2 percentage points, respectively).

Columns 5 and 6 show what would have happened to the size of the non-elderly middle class looking only at factor incomes. These results are also consistent with our results from Table 5. First, without the government, the non-elderly middle class would have been much smaller in virtually all countries (between 5 and 6 percentage points). Second, without government fiscal policies, the size of the non-elderly middle class would have declined substantially in virtually every country. Third, the largest middle class decline in terms of factor incomes occurred in the UK and Germany. Finally, the US experienced a below average decline in the non-elderly middle class, and US was the only country where fiscal policy worsened the middle class decline for non-elderly households. What this means is that fiscal policy in the US over a 20-year period tended to worsen the economic condition of the middle class. The government took more away from middle class households in the form of taxes than it gave to middle class households in the form of government financial benefits.

Table 6 demonstrates that the results from Table 5 are not driven by government retirement programs for the elderly. Rather,

they are the result of general government expenditure and tax policies. Progressive fiscal policies lead to a large middle class; in contrast, the failure to employ progressive fiscal policy lets the market predominantly determine income distribution and leads to a relatively small middle class.

VII- SUMMARY AND POLICY IMPLICATIONS

This paper has examined the size of the middle class across countries and over time using the Luxembourg Income Study. In several countries the size of the middle class declined significantly between the late 1970s/early 1980s and the end of the twentieth century. This decline also seems to result much more from households falling into the lower class than from upward class mobility.

The paper also examined several attempts to explain why the middle class shrank in some countries but not in other countries. Two demographic explanations and one macroeconomic explanation of middle class decline were not supported by LIS data. A more Keynesian hypothesis-- that fiscal policy is an important determinant of the size of the middle class-- was found to have considerable empirical support.

These results dovetail with recent work in sociology and political science on welfare regimes. Expanding on of Titmuss (1958), Esping-Anderson (1990, pp. 26ff.) identified three types of welfare state. The "liberal welfare regime" emphasizes market efficiency and limited government intervention. Such countries provide modest social transfers and social insurance. This model is explified by Canada, the UK and the US. "Corporatist regimes"

(such as Austria, France, Germany and Italy) are committed to preserving the traditional family. Social insurance programs in these nations usually encourage motherhood and they provide relatively meager benefits, such as day care, that would encourage married women to work. Finally, the "social democrat" model pursues equality. Government support is viewed as a universal right and a responsibility of the state. Scandinavian countries-- Netherlands, Norway, Sweden-- generally fit into this category.

There are several things worthy of note here. First, liberal welfare regimes tend to have the smallest middle classes and social democratic states tend to have the largest middle classes.

Second, the largest declines in size of the middle class seemed to occur in the liberal welfare regimes, while the largest increases occurred in the corporatist states. The social democrat countries, which started out with largest middle classes, managed to maintain the size of their middle classes despite adverse economic circumstances.

This becomes even clearer if we look again at Table 4. The changes in unemployment in the last columns of this table can be viewed as the macroeconomic pressures exerted on the middle class. As unemployment rises, the middle class will tend to shrink unless national governments act to shore up incomes and support households in their struggles to maintain a middle class lifestyle. In these terms, there was very little pressure in the US on the middle class, from the late 1970s to the mid 1990s because the US unemployment rate changed so little. But with a focus on individual independence and pressures from various

quarters to reduce government spending, minimal pressures on the middle class still led to a sharp decline in the size of the middle class. The pressures in the UK were a bit stronger, but again a philosophy in support of market incomes led to sharp declines in the middle class.

In contrast, in the corporatist state of Germany, similar rises in unemployment were kept in check by government policies that supported the middle class. This was also true of the social democrat countries of Sweden and Norway, the former of which experienced the highest increase in unemployment of our 11 nations.

The policy implications of this analysis should be obvious. If a large middle class is important for economic and for non-economic reasons, and if the market is unable to yield this result, fiscal policy must be used for redistributive purposes.[6]

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TABLE 1
MIDDLE CLASS HOUSEHOLDS
(as a percentage of all households)

COUNTRY	HISTORICAL DATA*	WAVE #1	WAVE #2	WAVE #3	WAVE #4	WAVE #5	CHANGE FROM WAVE #1 TO WAVE #5
Canada	28.1%	33.0%	35.1%	36.3%	35.8%	37.0%	4.0
Germany	40.5%	41.5%	43.1%	51.4%	43.9%	42.6%	1.1
Israel	N.A.	28.6%	31.1%	32.1%	28.7%	27.9%	-0.7
Netherlands	N.A.	41.0%	43.4%	39.0%	38.7%	39.7%	-1.3
Norway	N.A.	41.4%	44.2%	45.7%	45.3%	46.3%	4.9
Taiwan	N.A.	41.1%	42.1%	39.9%	39.0%	36.6%	-4.5
Spain	N.A.	35.5%	N.A.	37.7%	35.8%	33.3%	-3.2
Sweden	32.5%	54.0%	48.6%	47.8%	52.7%	46.9%	-7.1
Switzerland	N.A.	36.9%	N.A.	37.9%	N.A.	37.8%	1.5
U.K.	35.2%	36.5%	38.2%	29.6%	32.6%	32.0%	-4.5
U.S.	31.5%	31.7%	29.3%	29.7%	27.3%	29.3%	-2.4
AVERAGES+	33.6%	38.3%	39.5%	38.8%	38.0%	37.1%	-1.1
AVERAGES++	33.6%	35.3%	34.9%	35.5%	33.2%	33.5%	-1.8

SOURCE: Luxembourg Income Study

NOTE: middle class is defined as households with between 75% and 125% of median adjusted household income. See text for explanation of adjustment.

*Historical data is from the late 1960s and early 1970s, except for the US, where data is for 1974.

+unweighted

++weighted

TABLE 2
UPPER CLASS HOUSEHOLDS
(as a percentage of all households)

COUNTRY	WAVE #1	WAVE #2	WAVE #3	WAVE #4	WAVE #5	CHANGE FROM WAVE #1 TO WAVE #5
Canada	35.2%	34.6%	34.3%	34.9%	33.3%	-1.9
Germany	32.3%	31.4%	25.9%	29.9%	31.2%	-1.1
Israel	37.2%	35.9%	36.3%	36.2%	37.3%	0.1
Netherlands	34.9%	34.8%	35.4%	34.9%	33.4%	-1.5
Norway	31.8%	28.8%	28.7%	29.2%	28.9%	-2.9
Taiwan	32.7%	31.6%	32.8%	32.9%	34.6%	1.9
Spain	34.1%	N.A.	33.8%	36.7%	35.7%	1.6
Sweden	25.7%	27.0%	28.3%	26.0%	29.7%	4.0
Switzerland	32.6%	N.A.	33.0%	N.A.	32.8%	0.2
U.K.	33.8%	34.9%	36.9%	36.6%	36.1%	2.3
U.S.	35.3%	36.1%	35.8%	37.4%	36.3%	1.0
AVERAGES+	33.2%	32.8%	32.8%	33.5%	33.6%	0.34
AVERAGES++	34.2%	34.5%	33.6%	35.3%	34.9%	0.67

SOURCE: Luxembourg Income Study

NOTE: upper class is defined as households with more than 125% of median adjusted household income.

+ unweighted

++weighted

TABLE 3
MIDDLE CLASS DECLINE AND DEMOGRAPHICS

COUNTRY	CHANGE IN MIDDLE CLASS (from WAVE #1 to WAVE #5)	CHANGE IN MIDDLE CLASS WITH CONSTANT AGE DISTRIBUTION	CHANGE IN MIDDLE CLASS WITH CONSTANT GENDER DISTRIBUTION
Canada	4.0	3.6	4.0
Germany	1.1	0.9	1.2
Israel	-0.7	-0.8	-0.6
Netherlands	-1.3	-1.8	-1.3
Norway	4.9	5.0	5.0
Taiwan	-4.5	-4.3	-4.3
Spain	-3.2	-3.7	-2.9
Sweden	-7.1	-7.6	-7.2
Switzerland	1.5	1.8	1.6
U.K.	-4.5	-4.6	-4.5
U.S.	-2.4	-2.4	-2.5
AVERAGES[+]	-1.1	-1.3	-1.0
AVERAGES++	-1.8	-1.9	-1.8

SOURCE: Luxembourg Income Study

NOTE: middle class is defined as between 75% and 125% of median adjusted household income. See text for adjustment.

+ unweighted

++weighted

TABLE 4. CHANGES IN THE MIDDLE CLASS AND UNEMPLOYMENT

COUNTRY	CHANGE IN MIDDLE CLASS WAVE #1 TO WAVE #2	CHANGE IN MIDDLE CLASS WAVE #2 TO WAVE #3	CHANGE IN MIDDLE CLASS WAVE #3 TO WAVE #4	CHANGE IN MIDDLE CLASS WAVE #4 TO WAVE #5	CHANGE IN MIDDLE CLASS WAVE #1 TO WAVE #5
Canada	2.1	1.2	-0.5	1.2	4.0
Germany	1.6	8.3	-7.5	-1.3	1.1
Israel	2.5	1.0	-3.4	-0.8	-0.7
Netherlands	2.4	-4.4	-0.3	1.0	-1.3
Norway	2.8	1.5	-0.4	1.0	4.9
R.O.C. Taiwan	1.0	-2.2	-0.9	-2.4	-4.5
Spain	N.A.	N.A.	-1.9	-2.5	N.A
Sweden	-5.4	-0.8	4.9	-5.8	-7.1
Switzerland	N.A.	N.A.	N.A.	N.A.	N.A.
United Kingdom	1.7	-8.6	3.0	-0.6	-4.5
United States	-2.4	0.4	-2.4	2.0	-2.4
AVERAGES +	0.7	-0.4	-0.9	-0.8	-1.2
AVERAGES ++	-0.6	0.6	-2.3	0.5	-1.8

COUNTRY	CHANGE IN UNEMPLOYMENT RATE WAVE #1 TO WAVE #2	CHANGE IN UNEMPLOYMENT RATE WAVE #2 TO WAVE #3	CHANGE IN UNEMPLOYMENT RATE WAVE #3 TO WAVE #4	CHANGE IN UNEMPLOYMENT RATE WAVE #4 TO WAVE #5	CHANGE IN UNEMPLOYMENT RATE WAVE #1 TO WAVE #5
Canada	+1.2	+1.5	+0.1	-3.6	-0.8
Germany	+3.6	-1.1	+0.2	-2.4	0.3
Israel	+4.2	+3.5	-2.9	1.7	6.5
Netherlands	-3.1	-9.5	+3.1	-3.3	-12.8
Norway	0	+3.5	-0.5	-1.5	-3.0
R.O.C. Taiwan	+1.3	-1.2	+0.3	1.2	1.6
Spain	N.A	N.A.	7.6	-9.0	N.A
Sweden	0.6	+1.7	+5.2	-3.0	4.5
Switzerland	N.A	N.A	N.A	N.A	N.A
United Kingdom	+7.0	-2.8	+0.6	-4.0	0.8
United States	+1.2	-0.3	+0.3	-2.1	-0.9
AVERAGES +	+1.8	-0.5	+1.4	-2.6	-0.3
AVERAGES ++	+2.3	-0.9	+0.9	-2.8	-0.6

Source: Luxembourg Income Study and IMF, Economic Outlook (various issues) and ILO

+ unweighted averages

++ weighted averages

TABLE 5
MIDDLE CLASS HOUSEHOLDS
BASED ON FACTOR INCOME
(as a percentage of all households)

COUNTRY	WAVE #1	WAVE #2	WAVE #3	WAVE #4	WAVE #5	CHANGE FROM WAVE #1 TO WAVE #5
Canada	24.1%	21.2%	19.8%	16.7%	18.3%	-5.8
Germany	19.1%	18.9%	26.9%	15.1%	12.2%	-5.9
Israel	18.9%	17.1%	16.5%	15.9%	13.6%	-5.3
Netherlands	16.6%	15.2%	15.0%	13.8%	17.0%	0.4
Norway	20.7%	23.2%	18.8%	16.0%	17.3%	-3.4
Taiwan	39.6%	39.7%	37.0%	33.4%	32.8%	-6.8
Spain	23.4%	N.A.	20.8%	15.3%	18.5%	-4.9
Sweden	16.7%	15.5%	11.4%	9.3%	12.5%	-4.2
Switzerland	24.8%	N.A.	24.2%	N.A.	22.6%	-2.2
U.K.	20.2%	12.1%	12.3%	8.9%	10.1%	-10.1
U.S.	20.3%	19.0%	17.4%	17.0%	17.9%	-2.4
AVERAGES+	22.2%	20.2%	20.0%	16.1%	17.5%	-4.60
AVERAGES++	20.8%	18.6%	19.2%	15.8%	16.5%	-4.30

SOURCE: Luxembourg Income Study

NOTE: middle class is defined as households with between 75% and 125% of median adjusted household factor incor

+ unweighted

++weighted

TABLE 6
NON-ELDERLY MIDDLE CLASS HOUSEHOLDS
(as a percentage of all households)

COUNTRY	WAVE #1 (based on DPI)	WAVE #5 (based on DPI)	CHANGE FROM WAVE #1 TO WAVE #5	WAVE #1 (based on FI)	WAVE #5 (based on FI)	CHANGE FROM WAVE #1 TO WAVE #5
Canada	34.5%	35.2%	0.7	27.4%	21.9%	-5.5
Germany	41.5%	41.0%	-0.5	26.4%	16.0%	-10.4
Israel	30.1%	28.6%	-1.5	21.0%	15.0%	-6.0
Netherlands	36.7%	37.2%	0.5	21.0%	21.8%	0.8
Norway	42.7%	45.0%	2.3	27.9%	21.2%	-6.7
Taiwan	41.9%	38.9%	-3.0	40.7%	37.5%	-3.2
Spain	35.7%	31.7%	-4.0	28.2%	23.0%	-5.2
Sweden	49.7%	47.7%	-2.0	20.8%	15.3%	-5.5
Switzerland	38.1%	37.3%	-0.8	30.9%	28.8%	-2.1
U.K.	37.8%	29.0%	-8.8	25.8%	11.4%	-14.4
U.S.	32.7%	29.4%	-3.3	23.8%	20.8%	-3.0
AVERAGES+	38.3%	36.5%	-1.9	26.7%	21.2%	-5.6
AVERAGES++	35.9%	32.9%	-3.1	25.3%	19.7%	-5.8

SOURCE: Luxembourg Income Study

NOTE: middle class is defined as households with between 75% and 125% of median adjusted household income. See text for explanation of adjustment. Non-elderly means household head is under 60 years old.

DPI = disposable personal income

FI = factor income

+unweighted

++weighted

APPENDIX #1
DATA YEARS AND DATA SOURCES

COUNTRY	WAVE #1	WAVE #2	WAVE #3	WAVE #4	WAVE #5	SOURCE
CANADA	1981	1987	1991	1994	2000	Survey of Consumer Finances
GERMANY	1981	1984	1989	1994	2000	German Transfer Survey (1981); German Social Economic Panel Study (1984, 1989, 1994, 2000)
ISRAEL	1979	1986	1992	1997	2001	Family Expenditure Survey
NETHERLANDS	1983	1987	1991	1994	1999	Socio-Economic Panel
NORWAY	1979	1986	1991	1995	2000	Income and Property Distribution Survey
R.O.C. TAIWAN	1981	1986	1991	1995	2000	Survey of Personal Income Distribution
SPAIN	1980	N.A.	1990	1995	2000	Expenditure and Income Survey
SWEDEN	1981	1987	1992	1995	2000	Income Distribution Survey
SWITZERLAND	1982	N.A.	1992	N.A.	2000	Swiss Income and Wealth Survey (1982); Swiss Poverty Survey (1992); Income and Consumption Survery (2000)
UNITED KINGDOM	1979	1986	1991	1995	1999	Family Expenditure Survey
UNITED STATES	1979	1986	1991	1994	2000	March Current Population Survey