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**Net worth and the Middle Class: Patterns of Wealth and Debt, Before and After Financial Crisis**

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**Abstract:**

In this paper, we take the opportunity to examine wealth portfolios for the middle class and for various corresponding socio-economic groups. We identify the rich, at the top of the income distribution, the middle class (middle 80 percent) and the poor (bottom 20 percent). We examine several household types including the elderly, two parents with children and single parents. We also explore additional definitions of the middle class based on wealth and human capital.

We consider comparable net worth, financial assets, occupational pension coverage, home ownership and net home value, and debts. In addition, we simulate the plausible effects of the financial crisis on selected wealth components and discuss its impact on household indebtedness. We use data for Italy, Luxembourg, Sweden, the US and the UK from the recently created Luxembourg Wealth Study (LWS) - a harmonized cross-national database on household assets and liabilities.

**I. Introduction**

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**II. Brief Literature Review**

We focus our scan of the literature in two areas: the newer cross national literature on wealth holding including housing wealth especially, and the research on older person's poverty **\*\* (add on household types) \*\***. In both cases, we concentrate almost solely on cross-national research.

**Wealth in Cross-National Perspective**

New studies of comparative wealth holdings—many in the form of singular components such as owner occupied housing and pensions are just beginning to emerge over the past 5-7 years (Chiuri and Japelli, 2006; Apgar and Di, 2005; Banks, Blundell and Smith, 2003; Kapteyn and Panis 2003). Many of these have been limited because of unavailability of comparable data, or have been limited to two or three countries where each author harmonizes their own data for purposes of making a particular comparison. It should be noted that many of the new and emerging "cohort studies" of older persons

(HRS, ELSA, SHARE) will also help fill this comparative data void, but for one or two specific cohorts only. Moreover, the SHARE data is not yet ready for comparisons to the results presented here because household weights and data cleaning have not yet been released. The comparison we do have between the SCF and the HRS data show a close correspondence (Juster, et. al., 1999). Comparisons with ELSA and SCG have not yet been made.

Housing wealth is by far the most studied of these components (Chiuri and Japelli 2006; Apgar and Di 2005; Doling, et al. 2004; Claus and Scobie 2001; Banks et al. 2004). While housing is the most widely held real asset in many countries, its effects on other consumption or on additional wealth accumulations are less generalizable (Apgar and Di 2005). In the United States, reverse annuity

mortgages and home equity loans are just now beginning to be used by 'home rich but cash poor' elders to access their savings. Even then, this access is not terribly widespread, occurring to less than 10 percent of United States elders in the early 2000's (Fisher, et al. 2006; Copeland, 2006; see also Mitchell and Pigot, 2004 on Japan; and Hurst and Stafford 2004, on the United States). At the same time, Apgar and Di (2005) report that low income (bottom 20 percent of elders ranked by income) United States units which own their own homes outright, may still end up spending 25 percent or more on housing due to property taxes, utilities, and upkeep. Thus, ownership is not without direct costs even when the mortgage has been paid off. Indeed one could examine housing vs. income poverty and their joint distribution in cross-national context. The effects of housing on other consumption vary (Carroll 2004; Case, et al. 2005) with MPC's of 2-8 percent. Similar amounts are found by Catte, et al. 2004 for a wider range of OECD nations. The effects of housing wealth on consumption are smaller than those of financial wealth in some studies (Barrel and Davis 2004), but the results vary with the methods used (see Sierminska and Takhtamanova 2006, for an overview). Others have made forays on the extent of financial wealth holdings and their effect on consumption, claiming that the propensity to hold stocks in the United States is more widespread than in other rich nations (Dvornak and Kohler 2003) and therefore has a larger effect on spending.

Evidence of home owning and maintenance of housing wealth has been studied by many analysts in specific countries (e.g., Venti and Wise 2004; and Fisher, et al. 2006, for the United States; Crossley and Ostrovsky 2003, for Canada; Ermich and Jenkins 1999, in the United Kingdom; Tatsiramos 2004 for six European nations; and finally Chiuri and Japelli 2006, more generally using the LIS data). They find that housing is held long into retirement with the exception of two nations (Finland and Canada) where the transition from owning to renting takes place later in life. In most other nations, rules of housing finance, borrowing, and other national idiosyncrasies have large effects on renting vs. owning across the life cycle (e.g., see Chen 2006; Chiuri and Japelli 2003; Ortalo-Magne and Rady 2005; Martins and Villanueva 2006).

### **Poverty and Income in Cross-National Perspective among the elderly**

Despite major progress in recent decades, significant pockets of poverty remain among the elderly. The relatively precarious economic position of the elderly in the United States as measured by their incomes (Shaw and Lee 2005; Dang, et al. 2006) is even more evident when we look at cross-national comparative data. Poverty outcomes are markedly better in Canada and in Scandinavian-Nordic countries, than in the United States (Smeeding and Sandstrom 2005; Brown and Prus 2006)

A number of researchers have used the Luxembourg Income Study (LIS) data to analyze broader range income disparities amongst elders, (Smeeding 2003; Doring, Hauser, Rolf and Tibitanzl 1994; Hutton and Whiteford 1992; Smeeding, Torrey, and Rainwater 1993; Stapf 1994; Siegenthaler 1996; Smeeding and Saunders 1999). Many of these papers examine the income portfolio of elders (men, women and couples), and find a balanced package of private or occupational pensions, retirement savings, earnings and public transfers only at higher income levels. At median and below median income ranges, social retirement pensions or income tested public transfers dominate the income sources of elderly units in every nation.

Another body of literature assesses income trajectories and transitions during older years—although not necessarily with a focus on poverty alone. For example, drawing on the Cross-National Equivalent File, Burkhauser, et al (2005) studied the economic well-being of elders in the United States, compared to those in the United Kingdom, Canada, and Germany. They concluded that, despite diverse social welfare systems, the change in economic well-being in old age is actually remarkably similar across these countries.

In most cross-national research on older person's well-being, income is the main indicator. But in all of these studies wealth is rarely mentioned, though Smeeding (2003) capitalizes interest rent and dividend flows to estimate financial wealth, and he differentiates between homeowners and renters in some

comparisons. And the literature on elder consumption across countries is more limited and less well established (see Sierminska and Garner 2002). While recent papers suggest that consumption among older women is both higher than income and more equally distributed in the United States, we have no such estimates for other countries on a comparable basis (Johnson et al. 2005).

In summary, there is a large gap to be filled by papers using the LWS data. This paper is just the tip of a large iceberg of research, which will contribute to better understanding the joint effects of income and wealth on well being of vulnerable groups.

### III. Data, Variables, Methods, and Measurement Issues.

#### Data

The empirical work for these analyses is based on data associated with the Luxembourg Income Study (LIS). LIS is a cross-national archive of harmonized cross-sectional micro-datasets from across the industrialized countries. For over twenty years, LIS has collected and harmonized datasets containing income data at the household- and person-level; these datasets also include extensive demographic and labor market data. Currently, the LIS database includes over 140 datasets, from thirty countries, covering the period 1967 to 2002.<sup>1</sup>

The used in this paper are from the Luxembourg Wealth Study (LWS). The LWS database contains harmonized wealth micro-datasets from ten rich countries. These wealth datasets also include comparable income data. We use both components in this paper.

In this paper, we include five countries, which include Italy, Luxembourg, Sweden, the United Kingdom and the United States. (\*\*why these\*\*)

<sup>1</sup> See [www.lisproject.org](http://www.lisproject.org), for a detailed description of the Luxembourg Income Study (LIS), including both the original LIS datasets and the new LWS datasets. See also the first methodological paper from LWS, Sierminska, et al. (2006a)

The original datasets that the LWS project harmonized include; for the United States, the Survey of Consumer Finances (SCF) 2001; for the United Kingdom., the British Household Panel Study (BHPS) 2000; for Italy, the Survey of Household Income and Wealth (SHIW) 2002; and for Sweden, the Wealth Survey 2002 (Sierminska, et al, 2006a).

#### Income and Wealth—The Aggregate Indicators and Their Components

Our main income variable used in the income and wealth poverty analyses—is household disposable personal income (DPI). DPI is defined as the sum of total revenues from earnings, capital income, private transfers, public transfers (social insurance and public social assistance)—net of taxes and social security contributions.<sup>2</sup>

In the LWS data, these income sources are defined as follows. First, *earnings* include wages and salaries, as well as income from self-employment activities. Second, *capital income* includes interests and dividends, rental income, income from savings plans (including annuities from life insurance and private individual retirement accounts), royalties and other property income.<sup>3</sup> Third, *private transfers* include occupational and other pensions (e.g., pensions of unknown type or foreign pensions), alimony, regular transfers from other households/charity/private institutions, and other incomes not elsewhere classifiable.<sup>4</sup> Fourth, *public transfers* include *social insurance* (including some universal benefits such as social retirement pensions, unemployment insurance, disability benefits and family allowances), as well as *public social assistance*,

<sup>2</sup> Imputed rents and irregular incomes such as one-time lump sums and capital gains and losses are not included in DPI.

<sup>3</sup> Capital income does not include capital gains/losses, which are both excluded from the concept of DPI. See Niskanen (2006) on the exact definitions of disposable income in LIS and LWS.

<sup>4</sup> Private transfers do not include irregular incomes such as lottery winnings or any other lump-sums, which are excluded from the concept of DPI.

which includes income tested and means-tested cash and near-cash public income transfers.<sup>5</sup>

The counterpart of DPI, with respect to wealth, is the concept of net worth, which consists of financial assets and non-financial assets—net of total debt. Financial assets include deposit accounts, stocks, bonds, and mutual funds. Non-financial assets are broken into two parts: (owned) principal residence and other investment real estate. Finally, total debt refers to all outstanding loans, both home-secured and non-home secured. We do not include pension wealth, which has not been realized in the form of a pension flow or converted to accessible financial assets. Finally, business assets are not included as they are comparable for only a much smaller number of nations (see methodological note at the end of the paper and at <http://www.lisproject.org/lws.htm>).

#### **Analyzing the Economic Well-Being: the Unit of Analysis**

In analyzing economic well-being we ignore differentials in holdings amongst individuals within households (e.g., between spouses) because many sources of income and wealth cannot be disaggregated within households. We analyze only several types of households: those that include elderly persons (i.e., persons age 65 and older) as either the head or the spouse; single parents and parent households (\*\*Appendix Table A-1 and methodological note\*\*).

The unit of analysis is the household, or all the individuals within such households. Since assets are recorded on a household level, we implicitly assume full sharing of all resources amongst members of the household. We exclude other households with an elderly person, where neither head nor spouse are age 65 plus. These are most likely low income or frail elders living with adult children, where we assume that the majority of assets in the household belong to the younger generations and not the elders.

(\*\*estimates of household types\*\*)

<sup>5</sup> Our income measure does not include health care benefits in-kind, even we know that they are large (Garfinkel, Rainwater and Smeeding 2006), nor does it contain in-kind housing benefits in the form of imputed rent. It does include the cash value of having allowances, food stamps, and heating allowances.

#### **Equalizing Income and Wealth, and Other Data Adjustments**

As is standard in research on income, we “equalize” the income data—meaning, we adjusted each household’s income to account for household size. Incomes are equalized as follows: adjusted income equals unadjusted income divided by the square root of household size. Although there is a large literature on income equivalency scales, there is much less consensus about how to equalize wealth (Sierminska and Smeeding 2005). In most of our analyses, we use the same method for wealth as we did for income—in a few places we compare outcomes where wealth is not equalized. Incomes were bottom-coded at 1 percent of the mean equalized DPI and top-coded at 10 times the median unequalized amount. The wealth variables are not bottom-coded or top-coded and as a result wealth variables (net worth in particular) can contain negative and zero values. Because the top and bottom ends of these wealth distributions may differ across countries, depending on the quality of the wealth survey and the sampling practices among the richest portions of the population, we rely mainly on medians, not means. All observations with missing or zero disposable income or missing net worth were dropped from the sample. Furthermore, when we report actual currency amounts, all amounts are expressed as United States dollars, adjusted by purchasing power parities (PPPs), using the 2002 OECD individual consumption by households PPPs. Amounts referring to years prior to 2002 were deflated using each country’s CPI.

#### **IV. Results**

We begin by presenting a set of basic results followed by discussion in section V. Descriptive statistics are followed by deeper analyses of income and wealth for poor and non-poor units, housing values, the relationship between education and net wealth, and the joint distribution of income and wealth. Readers should keep in mind that wealth values e.g., for homes vs. financial wealth, may be sensitive to the year and date at which data are recorded.

### **Asset Participation and Wealth Holding**

Patterns of asset holding and portfolio composition amongst older household units are more similar in terms of prevalence than in level or composition (Table 1).<sup>6</sup> Excluding Germany (due to its bottom code for financial assets), only Italian elder households are 75 percent likely to hold some form of financial assets. In other nations financial asset holdings range from 82 percent (United Kingdom) to 95 percent (United States). Almost all of those with such assets hold deposit (savings or checking) accounts. Stock ownership is far less prevalent, except for Finland, Sweden and then the United States. The Swedish households are most likely to hold stocks, bonds and mutual funds, perhaps as a holdover from the “third tier” of their universal defined contribution retirement accounts (Sunden 2006). While financial asset holdings are widespread, they account for over 40 percent of household portfolios only in Sweden and the United States, where financial wealth is 44 percent of the total wealth portfolio (Table 1, Panel B). While the Swedish and the Finnish households are more likely to hold stocks than are United States elder households, they are of lesser value relative to other assets than in the United States.

Non financial assets figure heavily in the asset position of all elderly households, especially when looking at ones principal residence. German and Swedish households are least likely to own their own homes. United States elders are most likely to do so. In Finland, a full third owns other residences—most likely summer or vacation homes, a pattern also prevalent in the United States and Italy. Only in the United Kingdom do less than 10 percent of elderly headed households own other real estate.

Non-financial assets make up the major part of all elder portfolios, adding up to 83 percent or more of the total value of assets in Finland, Italy and Germany, but less than 60 percent in the United States. Despite its widely acknowledged role in elder wealth holding, the value of an own home for United States elderly is still only 35 percent of their total portfolio, but 55 percent or more

<sup>6</sup> Simply stated, ownership is one way to consider non financial assets, another is valuation.

in all other nations. Finland leads in the importance of the aggregate value of other real estate, but the United States is not far behind.

Debt holding among elderly households is most likely to be found in the United States (49 percent), Sweden (39 percent), and Canada (32 percent), we suspect for tax reasons, but also depends on the availability of these loans to the elderly. The majority of elder debt is held in the form of home loans and in the aggregate, debt values are 5 percent or less of the elder total wealth portfolio.

### **Values and Composition: Income and Wealth**

Median adjusted incomes for elder households (in 2002 PPP adjusted dollars) are remarkable similar in the countries we study (Table 2). In Finland and Sweden, they have the lowest relative incomes, but the variance across nations is relatively small. In income terms the elders are 10-15 percent less well off at the median compared to the whole population; and single elders typically have incomes 2/3 the value of the entire population. The PPP values of these incomes for the median unit are roughly the same, varying only from about \$13,800-20,043 for all households and from \$ 10,600-14,900 for singles. The United States is at the top of these rankings, as it should be since its GDP per person is 20-25 percent larger than that in the other nations compared here. Note that the overall median incomes (last two columns of Panel A), on which income and wealth poverty rates are based later in the paper, are also quite compressed. Excluding Italy, this suggest that the relative poverty measures we use are not very different from any absolute poverty measure which are also based on median incomes, e.g. using the overall average adjusted income per equivalent adult of \$19,061 as a basis for calculating absolute poverty.

Whether mean or median incomes are used similar conclusions can be drawn (Table A-2). For example, the elders are about 10 percent less well off at the mean compared to the whole population. Finland and Sweden once again, have the lowest relative incomes and the variance across nations is smaller than before. Single elderly households fare only a few percentage points better when the measure is based on mean rather than the median. The range of income

values based is slightly broader using the mean, as it varies from \$16,561-\$28,028 for all elderly households, and \$11,536-\$21,521 for singles. When these values are compared as a percentage of the average there are virtually no differences in the country rankings based on the two measures.

In contrast to median incomes, median wealth holdings vary by a much greater degree. Of course, owing to the life cycle, net worth is much larger for elders than it is for the average household, with two exceptions: Germany, where homeownership and home values are relatively low for single elders<sup>7</sup> and Italy where there are more multigenerational households. For elderly households, the United States is the wealthiest nation in both relative and absolute terms. Some of this difference may be due to the high wealth sub-sample in the United States SCF survey.<sup>8</sup> (Repeating this exercise using means yields similar results (Table A-2 Panel B). Italy and the United Kingdom are next most rich, while the Swedish and Finnish households have the lowest asset values for elders. Single elder Germans are by far the least well off in net worth terms, followed by the Swedes.

The data on net worth for the entire population presented in the final column of the table paint a very different picture. The median net wealth holdings of all households are very different than those of elders. Italian real estate and United Kingdom wealth holdings make them the richest, while the United States is now below the average nations median and not much different from Canada or Germany. These results suggest that we might find very different life cycle wealth portfolios across these nations (see Sierminska, Brandolini and Smeeding 2006a).

The components of income and wealth are shown in Table 3. The contrasts in income packages are large. Earnings are largest in the United States and Canada where retirement ages are latest and larger fractions work at older ages. Declared income from assets is also much larger in the United States (23 percent) than in other nations, with Finland second (15 percent). Private

<sup>7</sup> Much of the difference between Germany and the others might be explained by the vestiges of World War II and its effects on the German housing stock.

<sup>8</sup> For instance, these results do not change at all using median PSID values (which are not shown but which are very close to median SCF values) for these same wealth measures.

transfers— mainly occupational pensions —are largest in Finland, where there is some question as whether to count such pensions as private or public due to their mandatory employment related nature, and in Canada and the United Kingdom. Combined social insurance and social assistance is smaller in the United States (and Finland) than in other nations—27 percent vs. 65-69 percent in Sweden and Germany. In terms of the 4 legged stool metaphor—the income legs are the most even in the United States the United Kingdom and Canada, while other nations rely to a greater extent on public transfers. The legs of the stool are very different—shorter or longer - in other nations.

#### **Home Ownership and Value**

We take a closer look at home (principal residence) values in Table 4, for elders and for all households. As we expected, owning homes is important and owning them debt free is highly prevalent for elders in all of these nations. Interestingly, amongst owners, United States elders are least likely to own their equity outright. While the United States elders are most likely to own a home, equity in these homes is not of the highest value, whether we adjust for the numbers living in each household (equivalized values) or not. While fewer German or British elderly households own their own homes, they are of higher equity values than in the United States. The values of homes in Sweden and Finland are much less (and the homes are also somewhat smaller, we expect). Homeownership patterns are similar amongst single elderly, and while home values are less, outright ownership is slightly more prevalent for this group. These patterns are similar to those found elsewhere in the literature (e.g., see Chiuri and Japelli 2006 for the same countries using the LIS data; and Fisher, et al. 2006 for the United States alone).

#### **Debt**

**..to be completed**

**Financial Assets**

Patterns of financial wealth holdings are also examined in Table 5, with median values given for both those with positive wealth holdings and for all elders. Values for all households (aged or not) are also given and all values are equalized. Even amongst those with positive holdings only, median values are modest amongst elders. Elders in the US, Germany and Sweden who hold financial assets hold just over \$20,000 in financial wealth at the median. In all other nations, holdings are less —under \$10,000 in Canada, Finland and Italy. Moreover these holdings are not very different for single elders than for all elders. Counting the zeros by averaging over all units reduces median values even further, especially in countries with fewer positive wealth holders.<sup>9</sup>

Among the elderly poor, liquid asset holding is both relatively and absolutely small in all nations, except Sweden and Germany.<sup>10</sup> In all the rest of these countries, low income or poor households—elderly, single elderly, and all households, have little in the way of financial assets. It is surprising to find high levels of liquid assets amongst the elder households, poor and non poor, in the most generous social retirement spending nation, Sweden. It appears that while home ownership may be important to low income elders in most nations, liquid assets are not very important or plentiful, across nations whose social security and income maintenance systems differ substantially. Some of these differences may be traced to their treatment of liquid assets for targeted benefit eligibility or other “means tested” programs, including long-term care for the frail aged.

### **Effects of the Crisis**

**..to be completed**

### **Net Worth and Education**

We now take a quick look at asset holdings by educational status, as a

<sup>9</sup> There is some concern about response notes for financial assets in these surveys, but all datasets are adjusted for item non reporting using imputation

<sup>10</sup> The German data is collected only for those who have liquid assets in excess of \$2500 Euros. Thus the true median value for all wealth holders is probably not zero and the per cent holding financial assets is higher.

proxy for permanent income and long term health status. We employ a simple cross-national convention (see methodological note) to break elder households into three groups according to the highest level of education achieved by an elder head or spouse. In the United States this roughly equates to less than high school (low education); high school grad and some secondary education but no secondary degree (middle); and at least one tertiary education degree (high). We examine both the value of assets (Figures 2) and home ownership and value (Figure 3).

Except for Italy, net worth rises with level education. The slopes are steepest in the United States and the United Kingdom, and the variance in asset values increases with education. Virtually, all lowly educated elders in these countries have a median value of net worth of about \$ 50,000, but higher educated elders have median values that run from \$240,000 in the United States down to \$100,000 in Sweden. Italy, where home values are the major source of net worth shows median net worth values of \$195,000 -210,000 for higher and medium education, suggesting there is not much wealth return to higher education amongst these elder cohorts. The patterns of financial assets are similarly sloped, but at a much lower level and Italy is no longer an outlier. In all nations, the median lowly educated elder household has about \$10,000 or less in financial assets; the median medium educated elder household has \$22,000 or less. Only at higher education levels do we see a big spread and there the United States has a median value of almost \$70,000 while the next highest nation is at \$32,000. One question for future research is why the Swedish pattern looks so different from the others, both because of the higher level for lowly educated and the relatively modest accumulation for higher educated elder adults.

Homeownership is the most universal asset as we have seen and the gradient in the education relationship is fairly flat at the top of Figure 3a. Indeed only Germany stands out as a nation which has an entirely different level of ownership at all education levels for this cohort of elders. The steepest slope is in the United Kingdom where only 61 percent of those in lowly educated households are living in an owned home, compared to 89 percent of those in



highly educated households, and this slope is likely the consequence of low cost public or 'council housing' for low income households in the United Kingdom. Interestingly, the lines are reversed at the bottom of the Figure, with Germany having the highest value owned housing at each education level, followed by the United Kingdom and Italy.<sup>11</sup> The United States which has the steepest slope in home values is in the middle of the pack when it comes to values for owned homes amongst these elder cohorts.

## V. Conclusion

...to be completed

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<sup>11</sup> Again we speculate that the effect of World War II on the housing stock in Germany has much to do with the patterns we observe amongst this cohort of elders.

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