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Survey Estimates of Wealth Holdings in OECD Countries

Evidence on the Level and Distribution
across Selected Countries

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Abstract

This paper discusses issues that arise in the comparison of estimates of wealth holdings and their distribution in light of data for selected OECD countries. We find large differences in the level of wealth, depending on whether the mean or median levels are compared across countries. Sensitivity of wealth estimates to survey design are evident in that even within countries, these ranking of two different surveys depends on how central tendency is measured. Comparisons of the composition of household wealth based on secondary data, as well as the distribution of net worth, are difficult because comparable data are scarce. The evidence suggests that country ranking by level of net worth inequality is similar to that by income inequality, and that net worth inequality has tended to increase across the countries we examine.

Keywords: net worth, wealth level, wealth inequality

JEL classification: D31

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1 Introduction

Comparisons of income levels across countries and within countries across time are common ways to assess the extent to which living standards vary. As large disparities in incomes are thought to reduce the level of wellbeing that is associated with a given income level, comparisons of income levels across countries have long been augmented by comparisons of income distribution across countries (see Atkinson et al. 1995).

Wealth may also be important for understanding differences in economic wellbeing. While we tend to think that wellbeing depends on the flow of goods and services consumed by persons, the stock of wealth is important for understanding that level. At the household level, the stock of wealth is important for both generating income and, potentially, as a source of reserve funds that allow to smooth consumption in case of temporary fluctuations in income. Thus, analyses of both cross-country levels and distribution of wealth are an important complement to analyses of income levels and distribution.

There are many other reasons to study household wealth, including, importantly, the analysis of household portfolio choice. This paper, however, is motivated by distributional issues. There are many ways of defining wealth. If our interest lies in the overall distribution of wellbeing, wealth defined as human and non-human capital would be of central interest. In this paper, the term wealth refers to the more commonly used concept of net worth, which measures the value of all of non-human assets less liabilities. The problem is not so much in defining the general concept of wealth or net worth, but more so in actually measuring it or defining it based on data already available.¹ For this reason, researchers have analyzed wealth using instruments ranging from proxy variables that indicate the socioeconomic status of individuals to very broad net worth concepts. Many current net worth definitions seem to be data driven, but are not consistently used across studies (Sierminska 2005).

Three commonly used notions of wealth distinguished by Wolff (1990) include *household disposable wealth* (HDW), *augmented wealth* and *capital wealth*. The first is an accounting notion of wealth and refers to the market value of assets less liabilities that are directly tradable. Augmented wealth refers to the neoclassical notion of the present value of the discounted future stream of net income (including human capital or other comparable measure of future earnings possibilities). In practice, it includes among other wealth components some type of valuation of pension rights from public and private sources even if these do not meet the more stringent criteria for being wealth. In this respect, it is to be a better indicator of potential future consumption, but quite problematic to estimate.² The third concept is a narrower concept than HDW and refers to the ownership of income producing assets as a store of value and measure of power. In more recent studies, Wolff (1996, 1998, 2004) uses the concept of marketable

¹ See Jenkins (1990) for a discussion of other conceptual issues in defining wealth.

² Social security and private pension wealth quite often is excluded from the concept of net worth due to measurement difficulties; see Wolff (1992) Brugiavania et al. 2005).

wealth (a) and augmented wealth (b) using data created from estate tax registers along with survey data. These concepts appear to be the most widely used in the literature (Davies and Shorrocks 1999).

As expected, we have come across certain difficulties in cross-country comparisons. One of these is the different definitions that have been used for wealth. In some countries, broader concepts are used, while in others, very detailed wealth questions have been asked. This should be considered when making more general statements about the levels of wealth across countries. Through our literature search, we have found very few comparative studies. In what follows, we compile evidence on wealth composition and distribution to give an overview of the existing data, based on secondary sources.

2 Wealth definitions and sources across countries

In order to be able to compare wealth levels across countries, we need to know, among other things, about differences in the definitions of wealth used in the different countries and surveys. Differences in sampling and data collection, while highly technical in nature, can be very important for cross-country comparisons of wealth. For instance, whether or not a particular survey oversamples the wealthy can have a very large impact on the estimated level of wealth, as well as its distribution. We must also choose a common metric in which to compare wealth. We have chosen to convert the national currencies first to year 2002 prices using the OECD's price indices for actual private consumption, and then used purchasing power parities for actual private consumption, also from the OECD, to further convert the data to international US dollars.³

The exact definition of net worth varies depending both on what is available in the data and the purpose of each study. For Australia, Headey et al. (2004) are able to provide a rather complete concept of wealth in relation to aggregate wealth sources. They use The Household, Income and Labour Dynamics in Australia Survey (HILDA), which only excludes information on pre-paid insurance premiums and consumer durables aside from vehicles. For Canada, Morissette et al. (2002) exclude from their concept of net worth the value of the contents of the home, collectibles and valuables, annuities and registered retirement income funds (RRIFs) in order to have comparable wealth definition for their 1984 and 1999 waves. Brandolini et al. (2004) define household wealth in Italy as the total market value of dwellings, consumer durables and financial assets, net of debts. The value of small unincorporated businesses is excluded, as well as value of life insurance and private pension funds. Jappelli and Pistaferri (2000), who use the same survey, include the latter in their concept of net worth.

In Finland, net worth includes financial and non-financial assets, including housing and consumer durables net of debts. The main omission is that the value of forests is not included. In Norway, net worth includes the tax-assessed value of real capital and financial capital, less all debts. Using tax assessment is cost effective for data gathering purposes, but is associated with many well known problems, such as large

³ The source for prices indices is OECD (2005a: table A.14) and for PPPs OECD (2005b: table 1.12).

undervaluations of different assets and the fact that whatever is not included in the tax assessments is missed altogether. While we include information for Norway for completeness, we are quite sceptical as to its comparability with the numbers for other countries—which is already much in doubt.

In Japan, net worth, as defined by Kitamura et al. (2003), includes financial assets (excluding social security wealth), the value of principal residence, durables less golf club membership certificates, and debt. Banks et al. (2002) look at the distribution of financial wealth in Great Britain and provide some analysis of pensions and housing wealth. Their concept of net worth includes savings, investments (excludes pensions and housing) and debt. A comprehensive analysis of British wealth is not possible due to the lack of a survey that would measure all dimensions of wealth.

For the US, we provide results from two survey the Panel Survey of Income Dynamics (PSID) and the Survey of Consumer Finances (SCF). The SCF is one of the most complete wealth surveys in the world. In addition to asking multiple wealth questions, it over-samples the wealthy, which allows for more accurate measurement of wealth at the top of the distribution and therefore also of both total and mean wealth. The SCF also multiply imputes missing values, which also improves its accuracy. The PSID uses some imputation methods, has substantially fewer wealth questions and does not over sample the wealthy. Juster et al. (1999) find that the SCF net worth concept over-samples the Federal Reserve Flow of Funds by about 8 per cent. Meanwhile, the PSID total net worth is about 75 per cent of the SCF value and the correspondences varies across tangible assets.

Sampling is particularly important in wealth surveys, since wealth is much more highly concentrated than income. Questions about wealth are often deemed sensitive, potentially leading to large non-response rates. If non-response increases with the level of wealth, the total level of wealth can be seriously underestimated if special care is not taken to ensure sample responses at the higher end of the wealth distribution. The Australian HILDA has information on a wide range of wealth components. All the same, it under-represents the amount of wealth held by Australians, since the very wealthy, who hold a disproportionate share of total wealth, are under-represented. this is likely the true of the US Panel Survey of Income Dynamics (PSID), which understates Flow of Funds data from the Federal Reserve between 22-28 per cent.

The German data we report stems from the Income and Expenditure Surveys conducted by the German Statistical Offices. The data are top coded for income. The data have been obtained from self-assessments of wealth, which are considered to understate true wealth (Eymann and Börcsh-Supan 2002; Hauser and Stein 2003; Ammermüller et al. 2005). The Dutch data in turn stem from the Center Savings Survey (CSS), an annual panel that has a substantial over-sampling of high-income earners. The data have quite comprehensive information on different components of household wealth.

Both the Finnish and Norwegian samples are based on Income Distribution Surveys. In Finland, the IDS over-samples high-income earners, but does not specifically target the wealthy. The main difference between the Finnish and the Norwegian data is that the wealth variables in Finland are based on extensive interviews, while in Norway wealth data are taken from administrative registers, primarily those of the tax authorities. Such information is also available for Finland. A comparison of interview with register data

in the Finnish case suggests that average gross wealth from tax data is estimated to be about one half of that based on detailed interviews (Jäntti 2006). For debts, administrative data are estimated to be a little higher than the interview information. Tax data thus tend to undervalue assets and value debts at close to their true value. The Swedish sample is based on a household panel survey, the HUS.

3 Comparisons of the level of wealth across countries

A comparison of wealth levels in the late 1990s and early 2000 can be found in Table 1. The broadest measure of wealth, net worth, indicates that the United States is followed by Italy, Japan, Australia, the Netherlands and Canada, if we consider the US Survey of Consumer Finances as our benchmark. If, instead, we consider the US PSID, then the USA only surpasses Canada and the Netherlands in the level of net worth. However, these numbers are skewed upwards by a relatively small number of wealthy households. German net worth is close to that of the Netherlands, whereas the Nordic countries—of which we include information for Finland, Sweden and Norway—are very much lower. Norway, in particular, has a high level of GDP but very low net worth. Even though taxable wealth is expected to be less than survey wealth (Jäntti 2006), and the Norwegian tax rules are different, so the comparison to Finland is open to some doubt, the Norwegian levels do appear implausibly low. Even a doubling of Norwegian net worth would leave it with lower wealth on average than Mexico. As mentioned, differences in sample design and in particular whether the wealthy are over-sampled may have a large impact on the estimated average wealth levels. The analysis of median, rather than mean, wealth levels therefore is warranted.

The typical or ‘median’ household across countries is the richest in 2002 USD in Japan followed by Australia and the USA. Once we switch to this measure the specific survey in the USA has no effect on our conclusions. We can gain some idea of wealth inequality in the USA by noting that USA net worth, taking the much lower PSID average of US\$296,000 is about 2.5 times that in Sweden, US\$121,000. The median net worth in Sweden in 1997, by contrast, is US\$83,000, which is quite close to the USA (PSID) figure of 96,000.

It is also tempting to speculate that the Nordic countries’ low levels of net worth might in part be explained by the presence of legislated earnings-related pensions. While the details vary across countries, and also change over time within countries, the presence of pension legislation which make future benefits a function of earnings—or after recent reforms in Sweden and in Finland, of lifetime earnings—will almost certainly affect the perceived need for savings and therefore of wealth accumulation. A partial correction for this in cross-national studies would be to impute, based on labour market characteristics, some measure of the net present value of future expected pensions for those who have not yet retired. Such corrections are not possible without access to the household level microdata. Because of the non-negligible differences in the net worth concepts used by authors it may be more meaningful to examine the most comparable or specific components of net worth across countries, for example, the value of the principal residence.⁴ The owned home is the main component of assets in most

⁴ Even in this respect surveys vary; for example the US PSID provides information on the net value of owned home.

most countries (over 70 per cent) except for Germany and Japan (OECD 2000). Across countries, the highest average value is found in Australia, followed by the UK, Italy, USA, Sweden, Canada, Finland and Mexico. Once we turn to medians, the USA leads, followed by the UK, Australia and Canada. However, assessing cross-country differences is quite difficult, as information is incomplete and scattered. Turning next to debt, the lowest level is found in Italy and Mexico, followed by Finland, Canada, Sweden, Australia, Norway, and the USA.

Finally, we show in Figure 1 mean and median net worth for selected countries across selected years (measured in constant prices in the domestic currencies). In most cases, the mean of net worth increases faster than the median, a point we shall return to in Section 4 below. Finland experienced a decline in net worth between 1987-94, associated with both lower house and asset values. In Sweden, both the mean and the median appeared to increase quite robustly between 1984 and 1997. The USA (measured here using the PSID) exhibits a large gap between the mean and the median which is growing over time. For instance, between 1994 and 2001, net worth increased by two-thirds, from around US\$150,000 to just under US\$250,000.

Table 1: Wealth levels across countries (means and medians in thousands of 2002 USD)

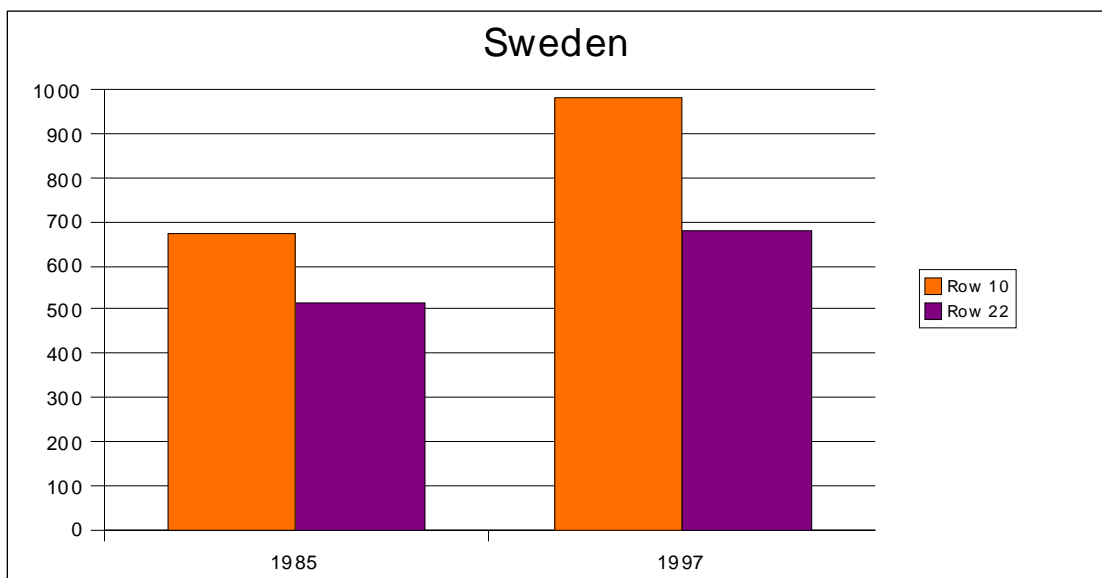
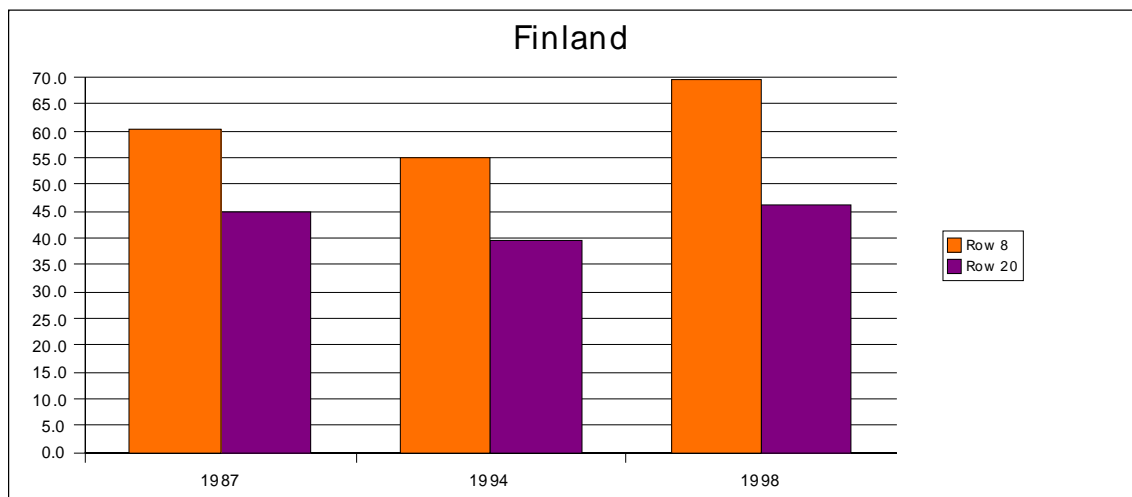
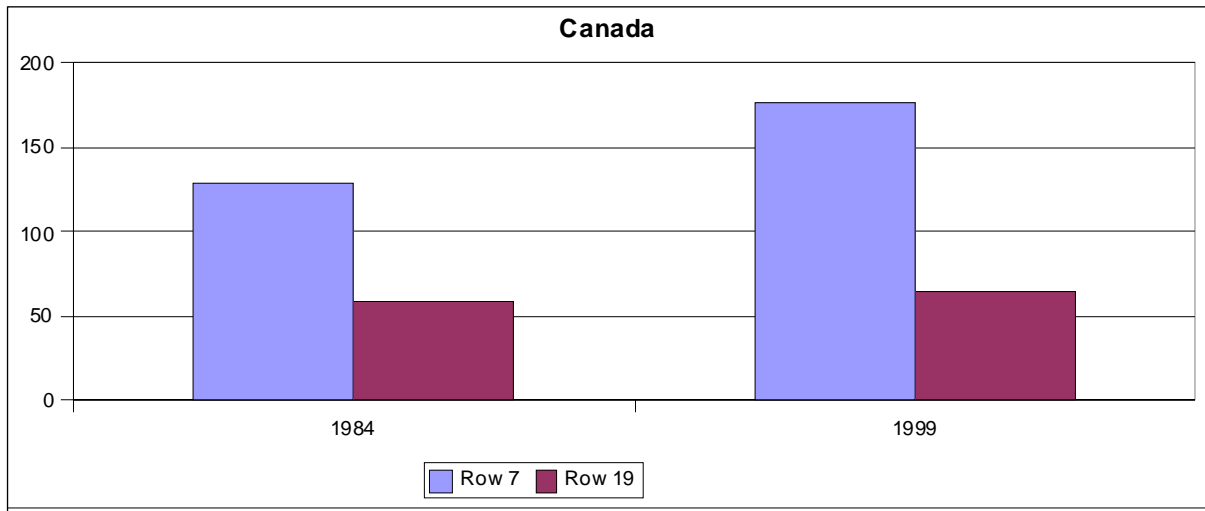
												PSID 2001	SCF USD 2001	SCF USD 2004		
	Australia	Canada*	Finland	Germany	Italy	Japan	Mexico	NL	Norway	Sweden	UK	US	US*	US*		
Mean	2002	1999	1998	1998	2000	1994	2002	1998	2002	1997	2000	2001	2001	2004		
Net worth	308.6	174.9	78.0	141.5	354.1	345.0	96.0	137.4	18.5	121.1	-	296.4	428.1	430.4		
Assets	360.9	207.8	91.7	166.4	359.1	-	96.9	181.4	72.2	155.1	-	-	486.8	506.1		
Financial assets	113.9	61.0	17.3	40.6	102.3	102.9	(2)	50.1	39.5	43.6	26.6	122.1	204.5	180.8		
Non-financial assets	247.0	121.4	96.7	-	256.8	187.1	(2)	-	32.8	-	-	180.6	(4)	282.5	325.3	
Housing (main)	157.1	78.7	40.2	-	133.5	-	30.5	-	-	79.1	153.0	76.5	(4)	132.4	163.8	
Other property		16.4	-	-	68.8	-	22.6	-	-	32.5		34.9	22.8	32.1		
All property	195.6	95.1	56.5	125.8	202.3	-	53.1	-		111.6	153.0	111.4	155.2	195.8		
Debt	52.3	32.8	13.7	24.9	4.9	-	0.9	44.0	53.8	34.0	3.9	(3)	7.2	(4)	58.9	75.9
Mortgages	39.2	25.4	10.0	23.2	-	-	-	38.9	-	-	-	-	44.3	(5)	57.1	(5)
Median																

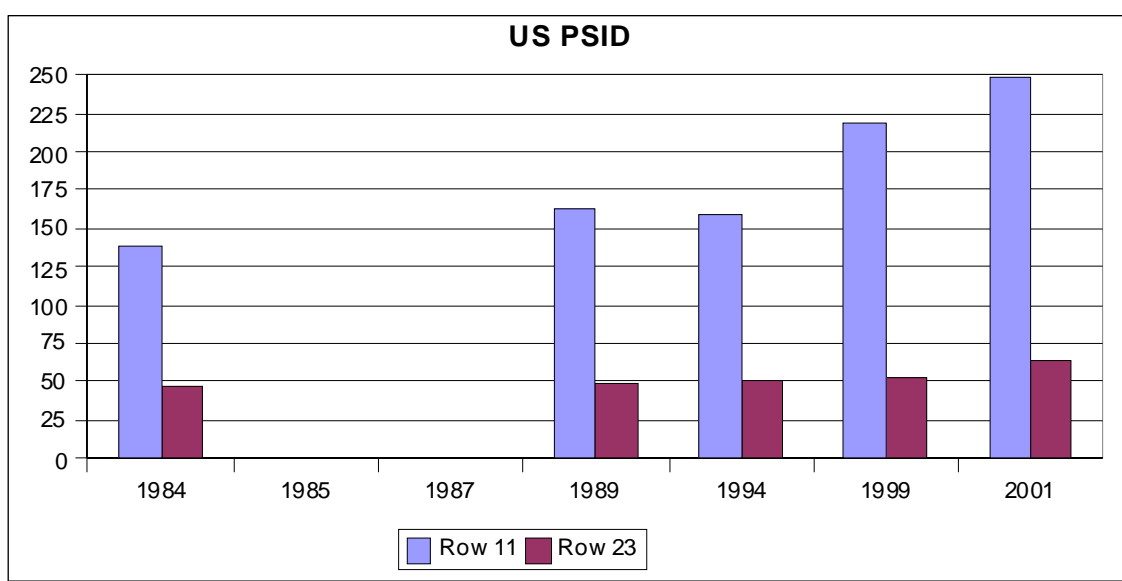
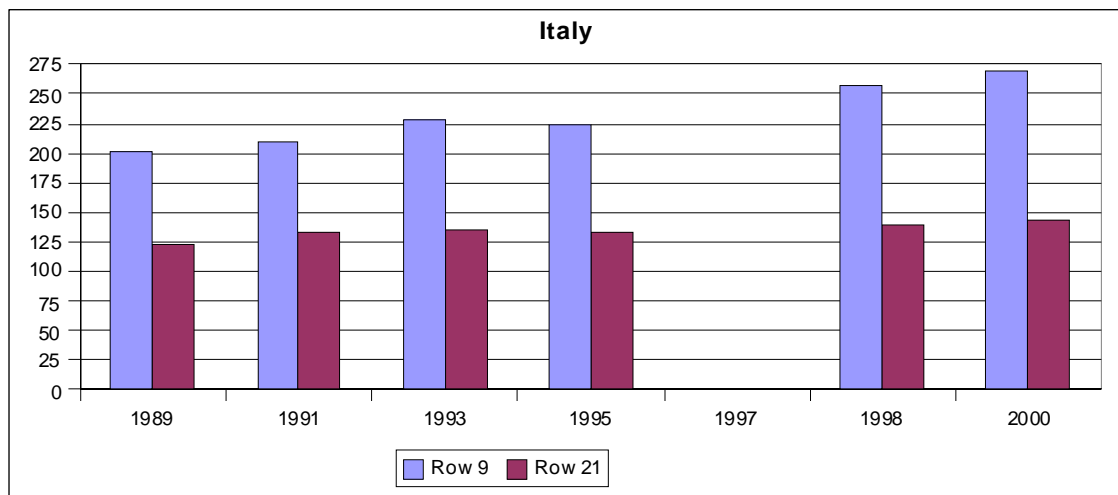
Net worth	166.8	-	51.9	47.9	-	219.8	12.9	-	-	83.3	-	96.5	93.1	89.4		
Assets	219.9	119.6	68.9	56.8	-		14.5	-	-	-	-	-	159.3	166.0		
Financial assets	39.3	14.5	-	19.0	-	61.5	(2)	0.0	-	-	-	-	30.3	22.1		
Non-financial assets	166.3	90.2	60.7	-	-	100.1	(2)	-	-	-	-	-	122.8	141.9		
Housing (main)	122.1	109.5	56.1	-	-	-	9.6	-	-	-	124.8	38.6	(4)	133.1	153.6	
Other property		56.9	-	-	-	-	0.0	-	-	-	-	0.0	86.5	96.0		
All property	137.4	-	-	-	-	-	12.9	-	-	-	-	-	-	-		
Debt	7.6	25.4	0.2	0.0	-	-	0.0	-	-	-	0.0	(3)	0.2	(4)	41.9	53.1
Mortgages	0.0	60.4	-	-	-	-	-	-	-	-	-	-	75.8	(5)	91.2	(5)

Note: *median for those with item (1) for median household of net worth and not the median over the entire distribution. (2) net financial assets=financial assets-debt; net housing assets=housing assets-housing debt. (3) Non-housing debt. (4) Includes main home equity not value of main home. For debt refers to 'other debt'. (5) Primary residence mortgage.

Source: Australia: Headey et al. (2005); Canada: Statistics Canada (2006); Finland: Jantti (2006); Germany: Ammermüller et al. (2005); Italy: Brandolini et al. (2004); Japan: Kitamura et al. (2002). Only net worth and net assets are available. Mexico: personal correspondence with Pedro Bernal. Netherlands: Alessie et al. (2002); Norway: Statistics Norway; Sweden: Klevmarken (2006); UK: Banks et al. (2002); USA: Gouskova and Stafford (2002), Bucks et al. (2006).

Figure 1. Mean and median net worth in selected countries across select years





4 Wealth portfolio composition and participation: levels and trends

We next turn to examine what components household wealth portfolios are constituted of and to what extent household hold any given wealth component. Home ownership turns out to be the most common form of wealth holding after deposit accounts in all our countries. A high average value of an owned home tends to coincide with a high rate of home ownership (Table 2) with 68 per cent of US households owning their home, followed by Italy (66 per cent), Canada (60 per cent) and the United Kingdom (57 per cent). Home ownership is most prevalent in Mexico with 74.4 per cent. Owning other types of housing is most common in Italy.

In terms of the portfolio composition of financial assets, deposit accounts are held by a majority of households in all countries except Mexico. Here, only 18 per cent of the population has financial assets, while over 80 per cent has non-financial assets. There are some differences in the types of financial investments held. In Canada and Italy, households invest in bonds and mutual funds, while in the USA more risky instruments in the form of stocks are more prevalent. Participation in financial assets is highest

though in the USA, then Canada, followed by Italy. Over half of the population holds debt in Canada, Finland, the Netherlands, and the USA (with the UK just below one half). The numbers are much lower for Germany (42 per cent), Italy (21 per cent) and Mexico (31 per cent). The major component of household wealth is housing, followed by pensions. However, many countries do not include information on pensions at all. As discussed, some may in fact have low levels for institutional reasons.

Trends in ownership indicate that in Italy from 1989 to 1998, non-financial ownership was quite stable with about 65 per cent owning their main residence, 26-34 per cent owning investment real estate, and 13-17 per cent owning their own business (Guiso and Jappelli 2002). There were some changes in financial asset participation. Bonds were popular among over 30 per cent of the population until 1995, at which point stocks and mutual funds became more popular (7 and 10 per cent respectively), as they have emerged as an alternative investment tool in the Italian market. By international standards, direct and indirect stock holding in Italy is quite low. This is due, in part, to high entry and management fees. Another feature of the Italian stock market is high volatility in relation to other markets. For example, the standard deviation of returns in the past four decades was twice as high as in other European countries (France, Germany and the UK) and in the USA. During the sample period, there was also an increase in private pension plan participation (17 in 1989, to 29 in 1998) due to reforms of the social security system and life insurance (14 to 23) stimulated by tax incentives. An expansion of consumer credit and personal loans has caused an increase in participation of non-housing debt.

Brandolini et al. (2004) construct for Italy an aggregate time series from the mid 1960s that indicates the value of housing in total wealth has fluctuated between 51 and 66 per cent. At least from 1989, this change is largely due to a change in real estate prices and rather than changes in home ownership rates (Guiso and Jappelli 2002). The stock of durables has been steadily declining, to be below 10 per cent by 2002, and debt, although very low (below 5 per cent) compared to other OECD countries, has for the past 25 years been increasing as a share of total wealth. In terms of the financial portfolio composition, they observe a steady decline in the share of deposit accounts (19 per cent in 1970s to below 10 per cent in 2002) in favor equities and mutual funds. The share of financial assets in overall wealth has been fluctuating (from 30-40 per cent) and is related to economic expansions in the past decades.

For the USA, data from 1983 to 2004 indicate relative stability in non-financial ownership. There has been a steady increase in home ownership, from 63 to 69 per cent, over the past twenty years. After 1983, business ownership has been steady at 11 per cent. Roughly, only 10 per cent of households have not owned any type of non-financial asset, but the number has fallen to less than 8 per cent in 2004 (Bertaut and Starr-McCluer 2002; Bucks et al. 2006). During this time, more traditional investments, such as certificates of deposits, bonds and life insurance, have become less popular. Households have been turning to financial tools with higher rates of return, such as mutual funds (5 per cent in 1983 to 18 per cent in 2004) although there has been a drop to 15 per cent in 2004. After 1992, stock ownership increased from 15 per cent in 1995 to 21 per cent in 2001, declined slightly by 2004. The share of households with tax-deferred retirement accounts has steadily been increasing from 1983 (31 per cent to 52 per cent in 2001). This also declined slightly by 2004, despite which the actual amounts

Table 2a: Asset participation (%)

	Canada	Finland	Germany	Italy	Mexico	Netherlands	UK	PSID	SCF	SCF
	1999	1998	1998	1998	2002	1998	2000	US	US	US
								2001	2001	2004
Financial assets:	93	-	-	-	15.8	95.4	-	-	93	94
Deposit accounts	88	92.3	82.2	83	-	93.2	76	82	91	91
Bonds	14	-	8.5	15	-	3.5	-	-	17	18
Stocks	10	-	17.1	7	-	15.4	-	30	21	21
Mutual Funds	14	-	17.7	11	-	21.6	46 (1)	-	18	15
Retirement accounts	61	-	56.6	8	-	25.4	-	35	52	50
Non-financial assets:	100	-	-	-	82.2	79.2	-	-	91	93
Housing (main residence)	60	73.2	46.2	(4) 66	74.4	50.8	57	68 (3)	68	69
Other housing	16	-	-	26	23.6	4.5	-	16	11	13
Business	19	-	-	12	17.7	5.1	-	13	12	12
Debt:	68	60.7	-	21	26.1	65.7	48 (2)	51 (3)	75	76
Mortgages	35		24.7	-		42.6	-	-	45	48

Note: (1) refers to investment wealth; (2) non-housing debt; (3) includes main home equity not value of main home, debt refers to 'other debt'; (4) total real estate.

Source: Canada: Statistics Canada (2006); Finland: Jäntti (2006); Germany: Ammermüller et al. (2005); Italy: Guiso and Jappelli (2003); Mexico: Bernal (2006); Netherlands: Alessie et al. (2002); UK: Banks et al. (2002); US: Gouskova and Stafford (2002) Bucks et al. (2006).

Table 2b: Asset composition (in percentages shares of total)

	Australia	Canada	Germany	Italy	Mexico	NL	Sweden	UK	US
	2002	1999	1998	2000			1997		
Financial assets:	31.6	36.7	28.6	28.9	45.2	27.6	28.1	-	35.7
Deposit accounts	4.6	7.5	11.0	11.4	-	9.7	-	-	13.2
Bonds	-	-	1.6	5	-	0.6	-	-	5.3
Stocks	-	-	2.4	-	-	6.6	-	-	17.6
Mutual Funds	6.6(1)	10.9	2.8	12.5	-	3.7	-	46 (5)	14.7
Retirement accounts	16.3	15.9	8.7	-	-	5.9	-	-	32
Other assets	7.8(2)	2.4	-	-	-	-	-	-	17.2
Non-financial assets:	68.4	84.5	-	72.5	54.8	67.5	71.9	-	64.3
Housing	54.2	62.2	88.9	37.7	-	63.7	51	-	50.3 (4)
Business	9.5	16.5	-	7.4	-	3.7	-	-	25.9
Total assets	100	121.3	-	101.4	100.0	100.0	-	-	100
Debt:	100	21.3	17.6	1.4	0.89	24.3	21.9	-	
Mortgages	75	14.1	16.4	-	-	21.5	-	-	70.2 (4)
Net worth	100	100	100.0	100	100	75.7	78.1	100	100

Note: (1) shares, managed funds, etc.; (2) includes vehicles, cash investments, trust funds, cash-in value of life insurance and collectibles; (3) stocks and bonds; (4) total real estate; (5) the question related to financial assets lists deposit accounts, retirement accounts, stocks and bonds, and the respondent is just asked to give the total value of all of these assets. The information on retirement accounts and deposit accounts (or savings) comes from other questions unrelated to the total value of financial assets. Therefore it is impossible to determine what is their share of the total financial assets. (6) The percentages are of total (gross) wealth, not net worth.

Source: Australia: Headey, Marks and Wooden (2005); Canada: Morissette et al. (2002); mutual funds also includes stocks and bonds; Germany: Ammermüller et al. (2005); Italy: Brandolini et al. (2004); Mexico: Bernal (2006); Netherlands: Alessie et al. (2002); Sweden: Klevmarken (2006); UK: Banks et al. (2002); US: Gouskova and Stafford (2002) Bucks et al. (2006).

held have been on the rise. The per cent of households with debt—both mortgages and personal loans—has been steadily on the rise. The importance of financial assets was also on the rise during this period, because of a growing value of equities and retirement accounts in the wealth portfolio and a declining relative role of home equity.

In Canada, evidence compiled by Chawla (1990) and Morissette et al. (2002) for 1984 and 1989 suggests that, similarly to the trends observed in the other countries we discuss, there have been more changes to participation among financial, rather than non-financial assets. Over the 15-year period, there has been a slight increase in home ownership (58 to 60 per cent) and investment real estate (13 to 16 per cent). The share of the main home in total net worth increased by less than two percentage points, and there has been a slight decline in the share of other real estate. The biggest decline occurred for business equity—from 25 per cent to 17 per cent of total net worth—although this has been accompanied by increased participation, from 14 per cent in 1984 to 19 per cent in 1999, which indicates that average business equity for units with a business has declined. For financial assets, we observe a decline of 3 percentage points in stock and 14 points in bond participation, but the overall share of equities in total wealth has increased. The biggest increase in the share of total net worth is observed for retirement accounts.

The British Household Panel Study is a popular source for wealth analysis in the UK. The range of questions and comparability across years allow Banks et al. (2002) to compare savings and investment for 1995 and 2000. Their analysis includes household units that have not changed in composition during the five years except for the addition or leaving of children. Most of the analysis is therefore performed by age groups, as the probability that household composition changes varies with age. If the household head is younger than 60, less wealthy benefit units are more likely to change composition. In benefit units where the head is over 60, the wealthier are more likely to change composition. The results indicate that over half of units with zero wealth in 1995 improved their position in 2000, whereas 21 per cent with medium levels of wealth in 1995 had zero wealth in 2000. The youngest and the oldest group were most likely to remain in the zero wealth group. Looking at those over 30 years old, of those with zero wealth in 1995, 40 per cent owned a home. There is not much spread in the mean and median value of the house, regardless of the wealth position in 1995. The highest mean and median is for those in the highest wealth group in 2000 who had zero wealth in 1995. House values on average increased by GB£33,000, the median increased by GB£23,000. Those with zero wealth in both years saw the smallest increase in the mean and median (27,000 and 16,000, respectively). Only 25 per cent of those in the group own their home compared to 40-60 per cent in the other wealth groups.

5 The inequality of wealth

The limits of comparing wealth across countries based on secondary sources are very obvious when trying to assess the degree on inequality in wealth. Some studies provide quantiles, such as deciles, quintiles or quartiles, which can be used to calculate quantile ratios. Others provide quantile group shares or means, while still others show summary income inequality indices such as the Gini coefficient. Thus, a comparison of the level and change in wealth inequality across countries based on secondary sources is very

difficult. Of course, details of the data choices limit the extent to which any two estimates of the same statistic can be compared across countries.

We opt for a very simple solution. Namely, many of the studies we looked at in Table 1 include two pieces of information that can be used to assess, in a rather crude way, the degree of inequality in the distribution of wealth. Theil's mean log deviation for a variable, say income, is defined as the difference between the mean of log income and the log of the mean of income. While Table 1 does not provide us with the mean of log wealth, we can do a crude version of this by taking the difference between the log of median wealth (which equals the median of log wealth) and the log of mean wealth. The difference between the mean and the median is of course closely related to the skewness of a distribution.

The results, shown in Table 3, suggest that this fairly crude measure may be able to capture some interesting aspects of the distribution of wealth. First, this measure allows us to order by inequality of net worth the countries for which we have both the mean and median net worth in Table 1. The ordering suggests that in the latter half of the 1990s and early 2000s, Mexico had the most unequal distribution of wealth, followed by the US. Canada, Italy and Australia are next and Japan, Finland and Sweden are at the low end of the inequality of wealth. Secondly, for a few countries we observe this indicator of wealth inequality across several years. In all cases, at least by this measure inequality is in the last available year more unequally distributed than early on, suggesting that disparities in wealth are increasing in several countries.

Table 3: Inequality of net worth

	Average inequality		
	-1990	1991-95	1995-2001
Australia	-	-	0.62
Canada	0.79	-	1.00
Finland	0.30	0.33	0.41
Germany	0.00	0.32	0.47
Italy	0.50	0.50	0.62
Japan	-	-	0.45
Mexico	-	-	2.01
Sweden	0.27	-	0.37
US PSID	1.15	1.13	1.40
US SCF	0.00	1.31	1.45

Note: Inequality is measured by the difference in mean and median net worth averaged across survey years.

Source: Authors' calculations from sources in Table 1.

6 Concluding comments

Attempts to summarize descriptive statistics for the level, composition and distribution of wealth across countries is known to be difficult because of differences in definitions and measurement. These kinds of concerns are what prompted, for instance, Kessler and Wolff (1991) to use microdata from France and the USA together with household balance sheets for the two countries to carefully construct a comparison between the two countries. These concerns are also behind the effort to construct a micro database of comparable wealth data, the Luxembourg Wealth Study described in Sierminska et al. (2006).

To some extent, the patterns we do observe correspond to what we might expect. The USA, for instance, does have high levels of net worth, as do many other 'rich' countries as measured by the level of GDP per capita. Housing is, as expected, an important component in net worth across all our countries. The story is not as simple as that, however. First, the differences across USA surveys suggest that means can be a bad gauge of central tendency for wealth in that the median, a much more robust measure, is fairly similar across the surveys. The Nordic countries are relatively close in national income to many of the countries which appear to be much richer in terms of net worth.

References

- Alessie, R., S. Hochguertel, and A. van Soest (2002). 'Household Portfolios in the Netherlands', in L. Guiso, M. Haliassos and T. Jappelli (eds), *Household Portfolios*, MIT Press: Cambridge MA.
- Ammermüller, A., A.M. Weber, and P. Westerheide (2005). 'Die Entwicklung und Verteilung des Vermögens privater Haushalte unter besonderer Berücksichtigung des Produktivvermögens', mimeo, ZEW: Mannheim.
- Atkinson, A.B., L. Rainwater, and T.M. Smeeding (1995). 'Income Distribution In OECD Countries: Evidence from the Luxembourg Income Study (LIS)', *Social Policy Studies* 18, OECD: Paris.
- Banks, J., Z. Smith, and M. Wakefield (2002). 'The Distribution of Financial Wealth in The UK: Evidence from 2000 BHPS Data', *Institute for Fiscal Studies Working Paper* 02-21, University College: London.
- Bernal, P. (2006) personal correspondence.
- Bertaut, C., and M. Starr-McCluer (2002). 'Household Portfolios in the United States', in L. Guiso, M. Haliassos, and T. Jappelli (eds), *Household Portfolios*, MIT Press: Cambridge MA.
- Brandolini, A., L. Cannari, G. D'Alessio and I. Faiella (2004). 'Household Wealth Distribution in Italy in the 1990s', *Temi di discussione*, Banca d'Italia: Roma.
- Bucks, B.K., A.B. Kennickell, and K.B. Moore (2006). 'Recent Changes in US Family Finances: Evidence from the 2001 and 2004 Survey of Consumer Finances', *Federal Reserve Bulletin* 92: A1-A38.
- Chawla, R. (1990). 'The Distribution of Wealth in Canada and the United States', *Perspectives on Labor and Income* 2(1): 29-41.

- Davies, J.B. and A.F. Shorrocks (1999). 'The Distribution of Wealth', in A.B. Atkinson and F. Bourguignon (eds) *Handbook of Income Distribution* Vol. 1, Elsevier Science: Amsterdam.
- Eymann, A., and A. Börsch-Supan (2002) 'Household Portfolios in Germany', in L. Guiso, M. Haliassos and T. Jappelli (eds), *Household Portfolios*, MIT Press: Cambridge MA.
- Gouskova, E., and F. Stafford (2002). 'Trends in Household Wealth Dynamics, 1999-2001', unpublished manuscript.
- Guiso, L., and T. Jappelli (2002) 'Household Portfolios in Italy', in L. Guiso, M. Haliassos and T. Jappelli (eds), *Household Portfolios*, MIT Press: Cambridge MA.
- Hauser, R., and H. Stein (2003) 'Inequality of the Distribution of Personal Wealth in Germany 1973-1998', *Levy Economics Institute Working Paper* 398, Levy Economics Institute: Annandale-on-Hudson.
- Headey, B., G. Marks and M. Wooden (2004). 'The Structure and Distribution of Household Wealth in Australia', *Australian Economic Review* 38(2): 159-75.
- Jäntti, M. (2006). 'Trends in the Distribution of Income and Wealth: Finland 1987-1998', in E.N. Wolff (ed.) *International Perspectives on Household Wealth*, Edward Elgar: Northampton MA.
- Jappelli, T., and L. Pistaferri (2000). 'The Dynamics of Household Wealth and Accumulation in Italy', *CSEF Working Paper* 27, Centre for Studies in Economics and Finance (Salerno, Naples, Milan).
- Jenkins, S.P. (1990). 'The Distribution of Wealth: Measurement and Models', *Journal of Economic Surveys* 4(4): 329-60.
- Juster, F.T., J.P. Smith, and F. Stafford (1999). 'The Measurement and Structure of Household Wealth', *Labour Economics* 6(2): 253-76.
- Kessler, D., and E. Wolff (1991). 'A Comparative Analysis of Household Wealth Patterns in France and the United States', *Review of Income and Wealth* 37(1): 249-66.
- Kitamura, Y., N. Takayama, and F. Arita (2003). 'Household Savings and Wealth Distribution in Japan', in A. Börsch-Supan (ed.) *Life-Cycle Savings and Public Policy: A Cross-National Study of Six Countries*, Academic Press: London.
- Klevmarcken, N.A. (2006) 'On Household Wealth Trends in Sweden over the 1990s', in E. Wolff (ed.) *International Perspectives on Household Wealth*, Edward Elgar: Northampton MA.
- Morissette, R., X. Zhang, and M. Drolet (2002). 'The Evolution of Wealth Inequality in Canada, 1984-1999', *Statistics Canada Analytical Studies Branch Research Paper* 187, Statistics Canada: Ottawa.
- OECD (2000) 'House Prices and Economic Activity', *OECD Economic Outlook* 68: 169-184.
- OECD (2005a). *National Accounts of OECD Countries* Vol 1. OECD: Paris.

- OECD (2005b). *PPPs and Real Expenditures: Benchmark Year 2002*, Eurostat-OECD: Paris.
- Sierminska, E. (2005). 'The Luxembourg Wealth Study: A Progress Report', paper prepared for Luxembourg Wealth Study workshop Construction and Usage of Comparable Microdata on Wealth, 27-29 January, Perugia.
- Sierminska, E., A. Brandolini, and T. Smeeding (2006). 'The Luxembourg Wealth Study: A Cross-Country Comparable Database for Household Wealth Research', *Journal of Economic Inequality* 4(3): 375-83.
- Statistics Canada (2006). Table: Household Assets, Debt and Wealth, http://www40.statcan.ca/101/ind01/13_3868_1989.htm?hili_famil109
- Wolff, E.N. (1990). 'Methodological Issues in the Estimation of the Size Distribution of Household Wealth', *Journal of Econometrics* 43(1-2): 179-95.
- Wolff, E.N. (1996). 'International Comparisons of Wealth Inequality', *Review of Income and Wealth* 42(4): 433-51.
- Wolff, E.N. (1998). 'Recent Trends in the Size Distribution of Household Wealth', *Journal of Economic Perspectives* 12(3): 131-50.
- Wolff, E.N. (2004). 'Changes in Household Wealth in the 1980s and 1990s in the US', *Levy Economic Institute Working Paper* 407, Levy Economics Institute: Annandale-on-Hudson.