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Editors

The Financial Systems of Industrial Countries

Evidence from Financial Accounts

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To our parents

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Household Wealth in a Cross-Country Perspective

4

Laura Bartiloro, Massimo Coletta, Riccardo De Bonis, and Andrea Mercatanti

Abstract

This paper provides a comparative analysis of household wealth in the United States, the United Kingdom, Japan, France, Germany, Spain, and Italy. We start by comparing national levels and composition of financial wealth, looking at the instruments in which households invest: deposits, securities other than shares, shares and other equity, mutual funds, pension funds, and insurance products. We then discuss the empirical evidence on household indebtedness and real assets across countries, providing a summary of the situation with regard to total household wealth (i.e. net financial assets plus real assets). The analysis of aggregate wealth is accompanied by an examination of micro data on household asset participation and the distribution of household net worth. Finally, we study some correlations and run an econometric exercise on the links between household wealth and selected economic indicators, with particular focus on saving.

4.1 Introduction

Household wealth is the focus of many different lines of research. An incomplete list includes studies of the wealth effect, notably the effect of wealth variations on consumption (see Poterba 2000; Paiella 2007); contributions that look at wealth

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in order to deduce information on agents' risk aversion (Guiso et al. 2002); the literature that examines the financial instruments held by households as a guide to the peculiarities of the financial systems of different countries (Goldsmith 1969; ECB 2002; Babeau and Sbano 2002); and studies of the links between portfolio choice, retirement saving, and poverty (Kapteyn and Panis 2003; Group of Ten 2005; Brandolini et al. 2010).

More recently, the financial crisis and the decline in share and house prices in many countries have reinforced the debate on asset values, on the economics of housing and on the way changes in household wealth and indebtedness can affect macroeconomic and financial stability (Cecchetti 2006; White 2007). Further research deals with the complex relationship between wealth and saving. On the one hand, one would expect a structurally large saving rate to be associated with a higher wealth-to-income ratio. On the other hand, high levels of wealth may reduce the propensity of households to save from current income. Lastly, one of the recommendations of the Stiglitz, Sen, and Fitoussi Report of 2009 is to consider income and consumption jointly with wealth in order to evaluate wellbeing.

The aim of this paper is to make a comparative analysis of household wealth in the main industrial countries: the United States, the United Kingdom, Japan, Italy, France, Germany, and Spain. We distinguish between financial wealth, household indebtedness, net financial wealth, and real wealth, i.e. non-financial assets. In commenting the empirical evidence, we summarise some of the recent literature on the subject. The analysis covers the period 1995-2009.

The paper is divided into six sections. Section 4.2 presents the main features of household financial wealth. In Sect. 4.3 we make a more detailed examination of its components: deposits, securities other than shares, shares and other equity, mutual funds, pension funds, and insurance instruments. Section 4.4 looks at household debt and net financial wealth. Section 4.5 is devoted to household real or non-financial assets, and household total net worth. Section 4.6 reviews the micro data available, while in Sect. 4.7 we present some correlations between household wealth and a set of macroeconomic indicators. The last section summarises the main conclusions of the paper. The sources of the data are described in the appendix.

4.2 Financial Assets

Households allocate their disposable income between saving and consumption. Saving is then used for investing, either in real assets (mainly residential property) or in financial instruments (e.g. deposits, bonds and shares). The accumulated stock of financial assets is important for individual wellbeing, as it represents the resources available to maintain adequate levels of consumption and welfare after retirement. Household financial assets are the result of the combined action of two factors: the net acquisition of financial instruments which accumulate over existing financial assets and the impact of changes in market prices.

Table 4.1 Household financial assets: ratio to disposable income

	Italy	France	Germany	Spain	UK	US	Japan
1995	2.5	2.1	2.0	2.1	3.9	3.9	3.9
1996	2.6	2.2	2.1	2.2	3.9	4.1	4.0
1997	2.9	2.3	2.2	2.4	4.4	4.4	3.9
1998	3.2	2.4	2.4	2.6	4.5	4.6	4.0
1999	3.4	2.7	2.5	2.7	5.0	5.1	4.3
2000	3.5	2.7	2.5	2.5	4.7	4.6	4.4
2001	3.3	2.5	2.5	2.5	4.2	4.2	4.5
2002	3.3	2.4	2.4	2.3	3.8	3.8	4.4
2003	3.3	2.5	2.5	2.5	3.9	4.2	4.6
2004	3.4	2.6	2.6	2.5	4.1	4.4	4.6
2005	3.5	2.7	2.7	2.7	4.4	4.7	4.9
2006	3.5	2.9	2.8	2.9	4.6	4.9	5.0
2007	3.4	3.0	2.8	2.8	4.6	4.9	4.9
2008	3.2	2.7	2.6	2.4	4.0	3.9	4.6
2009	3.4	2.9	2.8	2.4	4.4	4.1	4.7

See the statistical appendix for the sources of the data in the tables

Looking at the evidence provided by the financial accounts for the last 15 years, for financial assets held by households, as a proportion of disposable income, we identify two groups of countries (Table 4.1). In the first group, consisting of the UK, the US and Japan, financial wealth is more than four times disposable income, while in the second group, which includes Italy, France, Germany and Spain, it is between two and a half and three and a half times. Per capita figures broadly confirm the gap between the two sets of countries, which is mainly attributable to three factors.

A first explanation lies in households' participation in financial markets, which also allows them to benefit from capital gains. Individuals who invest in shares represent 30% of the population in the UK, 29% in Japan and 26% in the US, while the figures are 15% in France, 8% in Germany and 7% in Italy (Zingales 2007). Table 4.2, in which household financial assets are presented as a ratio to disposable income, confirms that listed shares figure more prominently in the first set of countries than in the second, reaching the highest value in the US. Participation in financial markets through mutual funds, pension funds and insurance companies is also higher in the US and the UK. Table 4.2 shows a similar degree of financial development for the US, the UK and Japan, although reflecting different household choices. While American households invest most in shares and other equity, Japanese savers concentrate on deposits, and insurance technical reserves are significant in the UK.[1] In other words, even if the Japanese stock market remains

[1] Defined as actuarial reserves against outstanding risks in respect of insurance policies.

Table 4.2 Household financial assets with respect to disposable income

Countries and years	Deposits	Securities other than shares	Shares and other equities			Insurance technical reserves	Other assets
				of which quoted shares	*of which mutual funds*		
Italy							
1995	0.98	0.59	0.58	*0.07*	*0.10*	0.24	0.10
2003	0.84	0.65	1.16	*0.12*	*0.37*	0.50	0.09
2006	0.92	0.65	1.23	*0.15*	*0.34*	0.59	0.10
2009	1.03	0.69	0.99	*0.07*	*0.18*	0.60	0.10
France							
1995	0.86	0.12	0.50	*0.08*	*0.28*	0.50	0.09
2003	0.86	0.05	0.66	*0.08*	*0.27*	0.85	0.12
2006	0.84	0.04	0.82	*0.13*	*0.27*	1.05	0.14
2009	0.84	0.05	0.69	*0.10*	*0.22*	1.12	0.19
Germany							
1995	0.08	0.25	0.38	*n.a.*	*0.15*	0.55	0.02
2003	0.93	0.19	0.59	*0.10*	*0.31*	0.77	0.04
2006	0.96	0.23	0.67	*0.14*	*0.32*	0.86	0.03
2009	1.07	0.22	0.55	*0.09*	*0.33*	0.94	0.02
Spain							
1995	1.05	0.07	0.62	*0.10*	*0.21*	0.21	0.10
2003	0.98	0.07	0.99	*0.19*	*0.31*	0.37	0.08
2006	1.06	0.08	1.31	*0.24*	*0.32*	0.40	0.10
2009	1.15	0.07	0.77	*0.16*	*0.19*	0.36	0.08
United Kingdom							
1995	0.93	0.10	0.78	*0.34*	*0.14*	1.98	0.13
2003	1.05	0.08	0.64	*0.26*	*0.16*	2.03	0.12
2006	1.19	0.05	0.73	*0.26*	*0.19*	2.47	0.15
2009	1.25	0.05	0.58	*0.17*	*0.09*	2.35	0.14
United States							
1995	0.53	0.43	1.68	*0.81*	*0.22*	1.24	0.06
2003	0.52	0.38	1.85	*0.81*	*0.35*	1.40	0.06
2006	0.57	0.41	2.29	*0.97*	*0.42*	1.52	0.07
2009	0.59	0.42	1.66	*0.68*	*0.38*	1.33	0.07
Japan							
1995	2.09	0.31	0.44	*0.22*	*0.11*	1.04	0.22
2003	2.47	0.10	0.42	*0.22*	*0.10*	1.20	0.26
2006	2.41	0.13	0.80	*0.34*	*0.19*	1.23	0.24
2009	2.52	0.13	0.47	*0.20*	*0.17*	1.23	0.20

large in terms of capitalization, deposits are still very important in the country. As underlined by Demirguc-Kunt and Levine (2001), both markets and banks matter for financial development.

A second reason for the difference between the two sets of countries is household preferences for investing in real assets. Traditionally, household real assets have always been substantial in Spain and Italy (see Sect. 4.5) and, by contrast, extremely low in the US. However, the link between financial and real wealth is complex because, as we will see, the two forms of assets are complementary in countries such as the UK.

A third reason for country differences is that public pension schemes are less conspicuous in the first group of countries than in the second. Consequently, household financial assets are greater in the UK, the US and Japan because of the popularity of private pension schemes. Currently, the pension obligations of general government vis-à-vis households – which are important in the euro-area countries – are not classified in the financial accounts.[2]

In addition to these structural differences between countries, there are some factors that are common to all the economies. Between 1995 and 2009, the ratio of household financial assets to disposable income grew in all countries, but progress was not steady because financial wealth is influenced largely by equity prices. Financial assets increased between 1995 and 2000 in response to the stock market boom. The slowdown of equity prices affected financial assets adversely between 2000 and 2003 in every country except Germany and Japan where deposits are prominent in household portfolios. The subsequent recovery of stock prices, lasting until the first half of 2007, caused a new increase in financial assets in relation to disposable income. When the financial crisis started, financial assets were again hit by a fall in asset prices: in 2008 their ratio to disposable income decreased in all the countries, and especially in the US. By contrast, in 2009 the ratio gained from the recovery of the national stock exchanges.

Looking at the flows of financial assets (Table 4.3) from 1995 to 2009, the largest flows are in investment in insurance technical reserves. These flows were always positive and appear independent of the business cycle momentum. In terms of size, flows of deposits were the second most important form of household financial saving, particularly in years of plummeting share prices. The flows of securities other than shares were in most cases smaller than those of the other financial instruments and sometimes even negative. The flows of shares and other equity were linked to the trend of the stock exchanges, reaching peak values during the years of the internet bubble (1995–2000). In 2008, the financial crisis led to low and negative flows of listed shares and mutual funds. Instead, in 2009 and the first half of 2010, the low interest rates set by central banks in response to the economic recession prompted households to invest in shares at historically high levels.

In the last 15 years a general financial deepening process has taken place. Two key elements are deregulation and international integration. Between 1995 and 2007, when the financial crisis started, financial deepening was driven by the deregulation in finance and in financial institutions which led to a broadening of

[2] See in this volume Chapter 5 by Semeraro on the inclusion in financial accounts, as household assets and general government liabilities, of the items implied by pay-as-you-go systems.

Table 4.3 Household financial assets flows (percentages with respect to GDP)

Countries and years	Deposits	Securities other than shares	Shares and other equity	*of which mutual funds*	Insurance technical reserves	Other assets	Total
Italy							
1995–1997	1.5	1.8	4.1	*4.0*	2.2	0.7	10.3
1998–2000	−0.1	−3.4	8.4	*8.4*	3.3	0.2	8.4
2001–2003	2.7	3.7	−0.2	*0.1*	3.6	0.0	9.8
2004–2007	3.4	2.6	−0.2	*−1.1*	2.4	0.4	8.6
2008	4.3	3.4	−2.3	*−4.1*	−0.4	0.2	5.2
2009	1.8	−2.6	3.8	*0.6*	1.9	−0.3	4.5
France							
1995–1997	3.7	−0.6	−1.5	*−1.8*	5.3	0.3	7.2
1998–2000	1.6	−0.4	0.4	*0.7*	4.6	0.1	6.2
2001–2003	2.0	−0.3	1.5	*0.6*	3.9	0.6	7.6
2004–2007	2.0	0.2	0.6	*0.0*	5.3	0.7	8.9
2008	2.5	0.2	0.2	*−0.1*	3.3	0.6	6.6
2009	1.0	0.2	−0.2	*−0.7*	4.8	2.5	8.3
Germany							
1995–1997	2.0	0.6	1.1	*0.7*	3.2	0.1	7.1
1998–2000	0.4	−0.2	3.1	*2.1*	3.3	0.2	6.9
2001–2003	2.6	0.6	0.1	*1.8*	2.4	0.2	5.9
2004–2007	2.4	0.2	0.2	*0.4*	3.0	−0.1	5.6
2008	4.8	0.1	−1.3	*0.4*	1.6	−0.1	5.0
2009	2.1	−0.2	1.3	*1.2*	3.2	−0.2	6.1
Spain							
1995–1997	2.0	0.1	5.5	*5.3*	2.3	−0.9	9.0
1998–2000	5.3	0.0	0.2	*−0.1*	3.0	0.7	9.2
2001–2003	4.3	0.2	1.4	*1.1*	2.3	−0.1	8.1
2004–2007	6.2	0.5	0.5	*0.6*	1.6	0.7	9.5
2008	7.0	−0.6	−3.5	*−3.6*	0.2	−0.4	2.7
2009	2.5	0.2	1.0	*0.0*	0.9	−0.4	4.2
United Kingdom							
1995–1997	4.3	−0.4	−0.8	*0.5*	4.9	0.3	8.3
1998–2000	3.5	0.4	−2.2	*0.9*	3.6	0.6	6.1
2001–2003	4.9	0.3	0.1	*0.5*	3.7	0.4	9.5
2004–2007	5.9	−0.9	−2.2	*−0.2*	4.3	0.4	7.6
2008	5.4	−0.3	−6.6	*−1.1*	1.9	0.6	1.0
2009	1.1	0.0	0.8	*1.3*	0.7	0.1	2.8
United States							
1995–1997	1.2	0.5	0.9	*2.7*	3.1	0.4	6.0
1998–2000	1.3	−0.1	−1.9	*2.5*	3.3	0.7	3.4
2001–2003	2.8	−0.3	−0.9	*1.7*	3.5	0.3	5.5
2004–2007	3.2	2.0	−1.7	*2.5*	2.4	0.8	6.7
2008	2.4	−0.1	1.3	*1.7*	1.6	−0.8	4.5
2009	0.4	−2.8	1.4	*0.9*	0.9	−0.6	−0.7

(continued)

Table 4.3 (continued)

Countries and years	Deposits	Securities other than shares	Shares and other equity	*of which mutual funds*	Insurance technical reserves	Other assets	Total
Japan							
1995–1997	6.2	−0.8	0.1	*0.1*	3.5	0.1	9.1
1998–2000	4.1	−1.3	0.8	*0.6*	2.1	−0.1	5.5
2001–2003	2.3	−0.8	−0.4	*−0.1*	0.2	0.0	1.2
2004–2007	0.2	1.0	1.3	*1.5*	1.8	−0.8	3.5
2008	1.5	−0.4	1.0	*0.7*	−1.2	−0.6	0.3
2009	2.8	0.0	−0.4	*−0.4*	−0.5	−0.1	1.8

the range of instruments available for the allocation of saving. This is shown by the huge values of total asset flows to GDP recorded up to 2007 for almost all countries. Moreover, the greater integration of financial markets has been reflected in a growth of financial transactions with abroad. In most of the countries, the ratio of external financial assets or liabilities to GDP has risen (on this issue see Chap. 9 by Infante, Pozzolo and Tedeschi). There is a line of research on the drivers of financial integration that looks at determinants such as trade, domestic financial development, GDP per capita, size of countries, degree of capital account openness, and role of international financial centres such as the UK, Belgium, the Netherlands and Switzerland (Lane and Milesi-Ferretti 2008). The harmonization of financial regulation in Europe has also underpinned the increase in cross-border financial holdings.

Having observed some common trends, one can investigate whether there exists a convergence in the composition of household financial instruments between countries. Even though there is no theory of financial system convergence nor of an optimum financial system, globalization, economic integration and harmonization of regulations and corporate governance rules may have led to a convergence of some financial system characteristics. The results of some papers on the subject are influenced by the methodology applied, the time span considered, and the countries taken into account.[3] Signs of convergence in the composition of household wealth are emerging, but sometimes only for the products most closely linked to financial markets, such as shares and other equity and insurance and pension products. For instance, Schmidt et al. (1999) show that France is the European country which introduced, during the 1990s, the most important financial market reforms in the direction of the Anglo-Saxon model. National peculiarities seem to persist, if we look at the weight of deposits and securities other than shares. But taking into account a longer time span, in Chap. 7 of this volume Di Giacinto and Esposito find β-convergence for indicators of financial development of European countries also for banking products. Financial convergence remains a fascinating issue to pursue.

[3] See Bianco et al. (1997), Bartiloro and De Bonis (2005), De Bonis et al. (2007), Bruno et al. (2011).

4.3 The Composition of Financial Wealth

In this section we distinguish in detail between the different forms of financial wealth: deposits, securities other than shares, shares and other equity, mutual funds, and insurance technical reserves.

4.3.1 Deposits

From 1995 to 2006, the decrease of deposits in household portfolios as a percentage of total assets continued in all the European countries due to a longer term disintermediation process (Table 4.4). The share of deposits remained relatively stable in the UK and the US, where banking disintermediation took place earlier. As already underlined, Japan is an outlier. Households invest around 50% of their financial wealth in deposits; the Post Office is important in this regard. From 2007 onwards the financial crisis partially interrupted banking disintermediation: the percentage of deposits to disposable income increased in most of the countries, reflecting the move of households towards safer instruments.

Countries differ with regard to the importance of transferable and non-transferable deposits (Table 4.5). Italy and the UK are the only countries where transferable deposits, consisting mainly of current accounts, outweigh non-transferable ones. A first explanation is that transferable deposits have always been remunerated in these two countries, while this has not always been the case in other financial systems. For example in France, where transferable deposits have a small weight in the household portfolio, remuneration of current accounts was forbidden by law until 2006; in the US, transferable deposits are negligible given the strong competition coming from money market funds since the 1960s. The ratio of money market fund shares to the total mutual fund business in the US is the highest among the seven countries analysed.

A second explanation relates to the characteristics of the banking systems: non-transferable deposits are important not only in France but also in Germany and Japan, where relationship banking and the predominance of long-term loans led banks to issue deposits with a long agreed maturity.

A third explanation involves institutional factors. In the euro-area banking systems there are differences in product characteristics and business practices, particularly as regards taxation, degree of liquidity and the return structure of deposits (ECB 2006). For example, deposits redeemable with a period of notice of more than 3 months are offered only in Germany. In some European countries, customers become eligible for a mortgage after they have invested for a certain period in a long-term bank saving product. Repos are important mostly in Italy, because of the large availability in the economy of securities other than shares issued both by banks and the general government.

4.3.2 Securities Other than Shares

Securities other than shares are very important in household portfolios in Italy (20% of total financial wealth) and, to a lesser extent, in the US (10%), while their weight

Table 4.4 Household financial assets composition (percentages with respect to total assets)

Countries and years	Deposits	Securities other than shares	Shares and other equities	*of which quoted shares*	*of which mutual funds*	Insurance technical reserves	Other assets
Italy							
1995	39.2	23.7	23.4	*2.9*	*3.9*	9.8	4.0
2003	26.0	20.0	35.8	*3.8*	*11.3*	15.4	2.9
2006	26.3	18.6	35.3	*4.2*	*8.5*	17.0	2.8
2009	30.2	20.3	29.0	*3.5*	*5.2*	17.6	2.9
France							
1995	41.6	5.9	24.1	*3.6*	*13.4*	24.0	4.4
2003	33.9	1.9	25.9	*3.2*	*10.6*	33.5	4.8
2006	29.0	1.5	28.4	*4.4*	*9.5*	36.3	4.9
2009	29.1	1.6	23.9	*3.3*	*7.8*	38.8	6.6
Germany							
1995	42.4	11.8	18.2	*n.a.*	*7.2*	26.5	1.1
2003	36.8	7.5	23.5	*4.0*	*12.2*	30.8	1.5
2006	34.9	8.4	24.5	*5.1*	*11.8*	31.1	1.1
2009	38.3	7.8	19.7	*3.9*	*11.9*	33.5	0.7
Spain							
1995	50.9	3.9	30.2	*5.0*	*10.1*	10.1	4.9
2003	39.2	3.0	39.7	*7.7*	*12.3*	15.0	3.2
2006	36.1	2.6	44.5	*8.2*	*11.1*	13.5	3.3
2009	47.4	2.8	31.6	*6.5*	*8.0*	15.0	3.2
United Kingdom							
1995	23.8	2.4	19.9	*8.6*	*3.6*	50.5	3.4
2003	26.7	1.9	16.4	*6.6*	*4.0*	51.9	3.0
2006	25.9	1.1	15.9	*5.7*	*4.2*	53.9	3.2
2009	28.6	1.1	13.2	*3.8*	*2.0*	53.8	3.3
United States							
1995	13.4	10.9	42.7	*20.6*	*5.8*	31.4	1.5
2006	12.4	9.0	43.9	*19.1*	*8.2*	33.3	1.4
2006	11.7	8.6	47.1	*20.0*	*8.7*	31.2	1.3
2009	14.5	10.4	40.7	*16.8*	*9.3*	32.6	1.8
Japan							
1995	49.4	7.9	13.5	*6.7*	*2.4*	25.2	4.0
2003	55.2	3.7	9.3	*4.7*	*2.2*	26.0	5.8
2006	49.8	4.4	16.2	*6.7*	*3.9*	24.7	4.9
2009	55.4	4.7	9.9	*4.2*	*3.6*	25.9	4.1

is smaller and even negligible elsewhere. In the US, securities other than shares consist mainly of corporate bonds; in Italy during the 1990s, at first Treasury bonds had a predominant role but later, from the end of the 1990s, bonds issued by banks became prevalent.

Table 4.5 Household deposits (percentages of household total financial assets)

Countries and years	Deposits		
	Total	Transferable	Non transferable
Italy			
1995	36.7	15.9	20.8
2003	24.1	14.3	9.8
2006	24.0	14.3	9.7
2009	27.2	15.0	12.2
France			
1995	38.7	10.2	28.5
2003	32.5	8.5	24.1
2006	27.8	7.6	20.2
2009	27.6	7.4	20.2
Germany			
1995	41.3	7.0	34.3
2003	34.2	10.5	23.7
2006	31.6	10.6	21.0
2009	34.2	14.0	20.2
Spain			
1995	43.8	5.6	38.2
2003	34.6	6.0	28.7
2006	31.4	15.5	15.9
2009	42.1	17.6	24.5
United Kingdom			
1995	22.8	20.1	2.8
2003	25.7	23.4	2.3
2006	25.0	23.0	2.0
2009	27.6	25.2	2.4
United States			
1995	13.4	2.6	10.8
2003	12.4	1.1	11.3
2006	11.7	0.4	11.3
2009	14.5	0.6	13.9
Japan			
1995	48.2	6.5	41.7
2003	42.3	18.3	34.0
2006	47.0	18.8	28.2
2009	51.8	20.2	31.6

For a more correct interpretation of the data we need to look more closely at whether households can also own bonds indirectly through their holdings of mutual funds shares and insurance products. Some economists have recently criticized the national accounts standards for the way household assets are classified. The majority of the bonds held by insurance corporations, pension funds and mutual funds should be attributed to household balance sheets (Palumbo and Parker 2009).

This inclusion would raise household investments in securities other than shares in France, the UK and the US.

4.3.3 Shares and Other Equity

Shares and other equity is a heterogeneous item that includes listed shares, unlisted shares, other equity and mutual fund units (on the latter see Sect. 4.3.4). In Europe, between 1995 and 2000, the percentage of listed and unlisted shares in total assets increased significantly because of the stock market booms. The increase was particularly large in Italy and Spain, from relatively underdeveloped financial markets. Shares suffered from the stock market downturns between 2000 and 2003 and were boosted by the subsequent resurgence of prices. The crisis in the financial markets caused household holdings of shares and other equity to decrease as a percentage of total assets in all countries in 2008. Throughout most of Europe, the value of equities reduced not just because of this price effect, but also due to sizeable sales, as the flow statistics show (Table 4.3).

Listed shares, on the one hand, and unlisted shares and other equity, on the other, may be substitutes. If private business is important for the household portfolio, investments in listed shares might consequently be low. In a country like Italy, where small family-run firms predominate, households have a lot of unlisted shares and other equity in their portfolios, possibly crowding out other forms of equity investment. Heaton and Lucas (2000) emphasize that wealthy households face entrepreneurial risk through holdings of business assets. Following this argument, countries where unlisted shares and other equity are sizeable might have low levels of listed shares.[4]

On the basis of the available evidence (Table 4.6), unlisted shares and other equity are especially important in countries where small firms prevail, such as Italy[5] and Spain, while they are less important in the UK, the US, and Japan, where larger corporations traditionally predominate. However, unlisted shares and other equity are also large in France, notwithstanding the progress of formal financial markets in that country. The possible contrast between the different types of shares and other equity appearing in household portfolios is a subject that merits further analysis.

[4] The issue is difficult to study because there are statistical problems relating to the estimation of unlisted shares and other equity. International organizations, such as Eurostat and the OECD, have set up task forces to discuss common methodologies for estimating unlisted shares (see Durant and Massaro 2004). Only some countries are able to provide details on the amounts of listed shares, unlisted shares and other equity (on Italy, see Rodano and Signorini 2007).

[5] The limited number of companies that decide to go public contributes to both the incomplete development of the stock exchange and the reluctance of small business owners to open the equity of their firm to external investors. The limited success of a number of initiatives taken over the years by the Italian Stock Exchange for the listing of small firms suggests that, at least in Italy, the second reason is more important than the first.

Table 4.6 Household quoted shares, unquoted shares and other equity in 2009 (percentage composition)

	Italy	France	Germany	Spain	UK	US	Japan
Quoted shares	14.8	20.6	42.0	28.0	33.4	53.4	66.1
Unquoted shares	60.3	55.8	7.7	59.6	47.2		33.9
Other equity	24.9	23.6	50.3	12.5	19.5	46.6	0.0

4.3.4 Mutual Funds

In some years, mutual fund units were greater than 10% of total household assets. A mutual fund is a professionally managed collective investment scheme that pools money from many investors in order to purchase financial assets (bonds, shares, other mutual funds shares) and non-financial assets (commodities, real estate). Mutual funds have benefited from the deregulation of finance offering households new possibilities to allocate their savings and from cross-border holdings. Looking at the breakdown of funds according to their investment policy (Table 4.7), bond funds are particularly important in Spain and Italy. On the other hand, equity funds are more common in countries with larger financial markets, such as the UK, the US and Japan. In most of the countries reviewed, mutual funds have lost importance in household portfolios because of stock exchange difficulties and a disappointing performance.

A frequent distinction is drawn between open-end investment funds and closed-end funds. Open-end funds issue units that are, at the request of the holders, repurchased or redeemed directly or indirectly out of the undertaking's assets. Closed-end funds have a fixed number of issued shares and shareholders have to buy or sell existing shares to enter or leave the fund. Open-end funds are prevalent in all the countries. Close-end funds invest in real estate or securities. Funds investing in real-estate assets benefited from the recent increase in house prices. Closed-end investment funds buying securities are still marginal in most of the financial systems; they invest mainly in unlisted shares of start-up companies and in many countries they are equivalent to venture capital companies or private equity firms when they invest in more mature companies.

4.3.5 Pension Funds and Insurance Products

In the light of the crisis of public pension schemes, the ageing of the population and larger personal responsibility for the financing of individual healthcare, insurance technical reserves rose in all countries. The rise was particularly sharp in countries, like Spain and Italy, where private pension funds and insurance companies' business were small fifteen years ago. At the opposite extreme, UK households invest more than 50% of their portfolio in insurance technical reserves. As underlined by the OECD (2005), the British pension system combines one of the least generous state pension schemes of the industrialized countries with one of the most

Table 4.7 Mutual funds by investment policy (percentages of total mutual funds)

	IT		DE		ES		FR		UK		US		JP	
	2000	2009	2000	2009	2000	2009	2000	2009	2000	2009	2000	2009	2000	2009
Equity funds	37.4	16.6	27.3	14.9	20.2	6.8	34.1	28.3	n.a.	61.0	77.4	63.5	44.1	89.8
Bond funds	49.4	46.8	26.1	28.7	50.5	61.9	26.0	19.7	n.a.	19.9	15.8	28.3	55.9	5.2
Other funds[a]	13.2	36.6	46.7	56.3	29.3	31.3	39.9	52.0	n.a.	19.1	6.8	8.2	0.0	5.0

[a]Include mixed, real estate, hedge and other funds

developed systems of voluntary private pensions. This also explains why households' listed shares and mutual funds are less important than pension funds and insurance products in the UK.

The reform of public pension schemes was at the origin of increased household investment in pension funds in all countries (Table 4.8). The largest stocks of reserves are found in the UK and the US; intermediate levels are registered in Japan and Germany and low levels prevail in Spain, France and, especially, Italy. In Europe, private pension funds are facing obstacles: although households are well aware of the limited amount of resources they will receive from the public pension schemes at the time of retirement, they are still reluctant to invest in private instruments.

The institutional architecture of pension funds is different in each country. There are several possible classifications. A first example is the distinction between autonomous and non-autonomous funds. The former are managed by financial intermediaries or other managers to provide incomes for employees on retirement; the latter are funds set up by employers, for example large industrial corporations and banks, to offer pensions to their employees. Autonomous pension funds are prevalent in all countries, with the exception of Germany, where non-autonomous pension funds are a component of the German system of corporate governance.

A second distinction is between defined benefit plans, where the risk is borne by the unit responsible for portfolio management, and defined contribution plans, where the risk is mainly borne by the individual. There is a general trend towards an increase in defined contribution schemes. Nonetheless, they are still a minority in Italy, France and Spain, while they are more common in the UK, the US and Japan.

Not only is the incidence of pension funds different in each country but so is the composition of their assets. This asset mix reflects national developments in financial markets. While securities issued by general government are one of the main choices in the majority of countries, investments in deposits and real estate are important in Italy and shares dominate in the UK.

For life insurance products, a common distinction is between unit-linked and non unit-linked instruments (Table 4.9). In unit-linked life insurance reserves, the return of the capital invested is linked to the performance of an index or to a financial portfolio, and the risk is borne by the subscriber. Non-unit-linked life insurance reserves ensure a guaranteed rate and the risk is borne by the insurance company. During the stock market boom of 1995–2000, there was an increase in unit-linked contracts. They remain, according to OECD statistics, notably important in the UK.

4.4 Household Debt and Net Financial Wealth

Household propensity to borrow and its determinants vary across countries with many factors (ECB 2002; Campbell 2006). Cultural attitudes – the moral judgement on debt prevailing in society – are important. The scale of the tax deductibility of interest expenses varies across countries and influences borrowers' behaviour. The demand for mortgages is affected by the housing markets, including

Table 4.8 Household pension funds reserves (percentages of total financial assets)

Countries and years	Managed by autonomous pension funds			Managed by non-autonomous pension funds	Insured pension plans	Total
		Defined contribution	Defined benefit			
Italy						
1995	0.7	0.7	n.a.	0.4	n.a.	1.1
2000	0.6	0.6	n.a.	0.2	n.a.	0.8
2008	1.2	1.2	n.a.	0.1	n.a.	1.2
2009	1.2	1.2	n.a.	0.1	n.a.	1.3
France						
1995	0.0	0.0	0.0	–	0.0	0.0
2000	0.0	0.0	0.0	–	3.1	3.1
2008	0.1	0.1	0.0	–	4.1	4.2
2009	0.1	0.1	0.0	–	4.1	4.1
Germany						
1995	5.6	n.a.	n.a.	7.5	–	13.0
2000	6.1	n.a.	n.a.	6.7	–	12.8
2008	8.0	n.a.	n.a.	6.7	–	14.6
2009	7.9	n.a.	n.a.	6.7	–	14.6
Spain[a]						
1995	2.1	1.3	0.0	1.4	1.0	4.5
2000	3.7	2.6	0.1	1.2	0.9	5.8
2008	4.6	n.a.	n.a.	0.5	1.1	6.3
2009	4.7	n.a.	n.a.	0.5	1.1	6.4
United Kingdom						
1995	n.a.	n.a.	n.a.	n.a.	n.a.	25.8
2000	n.a.	n.a.	n.a.	n.a.	n.a.	24.5
2008	n.a.	n.a.	n.a.	n.a.	n.a.	23.5
2009	n.a.	n.a.	n.a.	n.a.	n.a.	24.4
United States						
1995	22.5	6.9	15.6	–	4.1	26.6
2000	22.9	7.8	15.1	–	4.6	27.5
2008	19.9	6.9	13.0	–	5.2	25.1
2009	n.a.	n.a.	n.a.	–	n.a.	26.8
Japan						
1999	n.a.	n.a.	n.a.	n.a.	n.a.	7.8
2000	n.a.	n.a.	n.a.	n.a.	n.a.	9.3
2008	n.a.	n.a.	n.a.	n.a.	n.a.	11.8
2009	n.a.	n.a.	n.a.	n.a.	n.a.	11.7

Data for 2009 are partially estimated

[a]Spanish households hold hybrid plans managed by autonomous pension funds representing 0.7%, 1% and 1.2% of their total financial assets in 1995, 2000 and 2007 (last year available) respectively

Table 4.9 Household life insurance reserves (percentages of total financial assets)

Countries and years	Life insurance reserves			Total insurance technical reserves
		Unit-linked	Non unit-linked	
Italy				
1995	3.2	n.a.	n.a.	4.0
2000	5.7	1.8	3.9	6.6
2008	9.7	3.2	6.5	10.7
2009	10.7	3.1	7.6	11.7
France				
1995	20.9	1.9	19.1	24.0
2000	24.2	5.4	18.8	26.8
2008	31.1	5.2	25.9	34.6
2009	34.6	n.a.	n.a.	37.9
Germany				
1995	12.6	0.1	12.5	14.5
2000	14.2	0.3	13.9	16.0
2008	16.9	0.8	16.1	18.7
2009	17.1	0.8	16.3	18.9
Spain				
1995	4.5	0.0	4.5	5.6
2000	6.8	1.3	5.5	8.1
2008	6.8	0.7	6.1	8.4
2009	7.0	n.a.	n.a.	8.7
United Kingdom				
1995	23.3	n.a.	n.a.	24.7
2000	26.7	n.a.	n.a.	27.9
2008	27.2	n.a.	n.a.	28.5
2009	28.3	n.a.	n.a.	29.4
United States				
1995	2.6	n.a.	n.a.	4.2
2000	2.5	n.a.	n.a.	3.6
2008	2.8	n.a.	n.a.	4.6
2009	2.8	n.a.	n.a.	4.6
Japan				
1995	17.1	n.a.	n.a.	17.1
2000	16.6	n.a.	n.a.	16.6
2008	15.0	n.a.	n.a.	15.0
2009	14.4	n.a.	n.a.	14.4

Data on 2009 are partially estimated

the efficiency of the rental market. Many features define the completeness of the markets for household debt: the types of loans available in the countries, the alternative between fixed and variable rates (see Paiella and Pozzolo 2007), the average loan duration, the restrictions and fees on early repayment, the prevalent

loan-to-value ratio, and the possibility of refinancing loans if house prices rise (mortgage equity withdrawal). Finally, the ratio of household loans to total banking credit may be affected by the efficiency of the legal system in ensuring that creditors recover their loans if debtors become insolvent.

Until the start of the financial crisis in 2007 household debt development was predominantly interpreted as an improvement in the degree of market efficiency. Complete and efficient markets – and more specifically a larger menu of options provided by intermediaries to customers – made it easier for individuals to smooth their consumption path along the life cycle. On the contrary, the problems of the sub-prime segment in the US, the bursting of the housing bubble, and the defaults of borrowers and resulting excessive household indebtedness had adverse effects on financial stability and the business cycle. An extreme view now is that debt is a pollution: it imposes costs on others that the borrowers fail to take into account (Jeanne and Korinek 2010) and a better allocation of resources would therefore be obtained by introducing a tax on debt (see Bianchi and Mendoza 2010). The intuition is that the rise in debt may lead to an increase in collateral values and subsequent risk of their collapse, according to the debt deflation idea of Fisher (1933) and to the financial accelerator hypothesis of Bernanke, Gertler, and Gilchrist (1996). There is currently a widespread opinion that policy-makers, central banks and supervision authorities should exercise closer oversight of household debt than in the past. The issue is cumbersome because households hold financial and real assets that may mitigate the burden of a high gross debt. However, a harmonized concept of indebtedness might be defined together with the introduction of common procedures for treating excessive debt of private individuals (European Commission 2008).[6]

Figure 4.1 shows the ratio of household financial liabilities (or debt) to disposable income. Financial liabilities include loans granted to households by banks and other intermediaries. In the financial accounts, household liabilities include other items, such as trade debts of producer households. We prefer to consider only financial liabilities: the measurement of trade debt and of other some minor items is not harmonized and the results would not be affected by taking into account total household liabilities.

Between 1995 and 2007, the ratio of household debt to disposable income increased in all the countries, with borrowers taking advantage of a general environment of low real interest rates. However, countries may be split into two sets. On the one hand, debt is very high in the UK, the US, Japan and Spain, with values that are greater today than those for disposable income. On the other hand, debt is smaller than disposable income in Germany, and especially in France and Italy. We now look in closer detail at the various national experiences.

In 1995, high levels of debt were found in Japan (106% of disposable income), in the UK (96%) and the US (89%). Subsequently, debt has increased slowly in Japan because of the economic recession. In the UK, debt growth has been significant

[6] In Europe, countries like France, Germany and the UK have judicial debt settlement procedures for households which are absent in Italy.

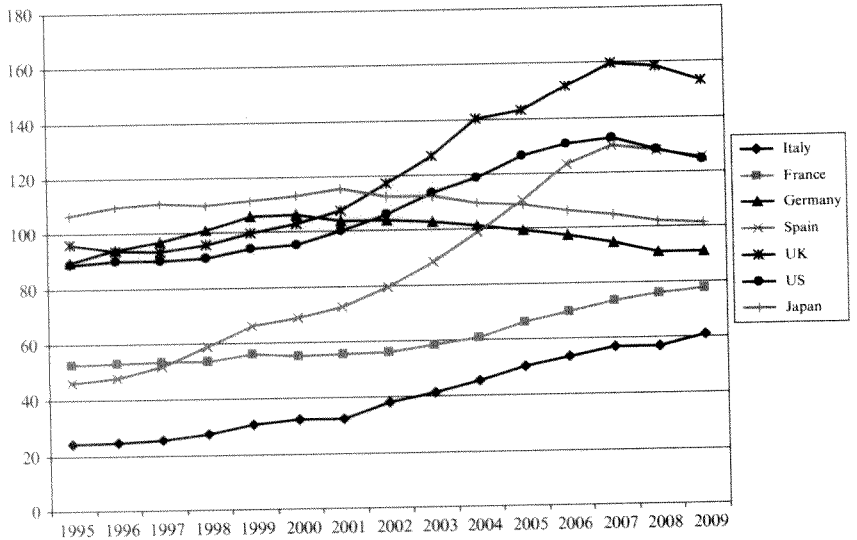

Fig. 4.1 Household: financial debt to disposable income (percentages)

since 2000, driven by intense banking competition and the diffusion of mortgage equity withdrawal (MEW).[7] The most recent data show the persistence of high household debt in the UK (153% of disposable income in 2009), the US (124%) and Japan (101%).

In the US, the growth of debt was similar to that in the UK, with an acceleration around the end of the 1990s and the use of home equity as collateral. From 2000 to 2006 American households became a net borrowing sector leading to an accumulation of debt (Eichner et al. 2010). With the recession in 2008, there was a decrease of the ratio of household debt to disposable income for the first time in 40 years. This de-leveraging has gone hand in hand with an increase in household propensity to save. Before the crisis, a large body of literature claimed that a broader availability of financial instruments underpinned macroeconomic stability. The decline in the volatility of the US business cycle was linked to a decrease in the correlation between housing investments and the other components of effective demand. The last two US recessions, in 1991 and 2001, were characterized by an increase in household leverage which contrasted with the four previous US recessions (Mojon 2007). The increase in household debt was considered to be a key component of the "great moderation" interpretation of the evolution of the American economy. Of course, the sub-prime crisis caused a reversal of the idea of a stable, positive association between economic growth and household debt. Regulators, public

[7] MEW takes place when households increase their borrowing secured on housing assets, devoting the funds to home improvements and consumption (Bank of England 2003; Walton 2004).

agencies, and economists are now asking for the introduction of consumer protection rules against predatory mortgage lending.[8]

Notwithstanding the high debt of the UK and the US, the most spectacular change took place in Spain, where between 1995 and 2007, household debt increased from 46% to 130% of disposable income. Saving was decreasing (see Sect. 4.5) and a real-estate price bubble was taking place.

Among the countries where debt is lower than disposable income, Germany has a similar story to Japan. Household debt was high in the 1990s, but subsequently stagnated because of the low growth of the economy. Lastly, France and Italy still lag behind in the level of household debt and are the only countries where debt continued to increase in 2008 and 2009.

The dispersion of household financial liabilities among countries is larger than that of financial assets. In Italy, the ratio of household debt to disposable income is around 40% that of the UK. The fact that the variance of the ratio of debt to disposable income is greater than the variance of the financial asset/disposable income ratio indicates that national institutional factors are still important in influencing household debt, while financial deepening, as shown in Sect. 4.2, was more widespread across countries. Bertola and Hochguertel (2007) note that the household menu of debt instruments is more severely constrained than the menu of assets.

Financial innovation is likely to influence the links between debt and the macroeconomy differently in countries like the US and the UK, on the one hand, and in countries where more traditional debt arrangements prevail, on the other. The diffusion of MEW is still limited in the euro area (the Netherlands are a notable exception, see DNB 2003). Another example is reverse mortgages: while they are common in the US and in the UK, they are rare in Italy, where a law on the subject was approved only in 2005.

Not only the level of debt matters but also its composition. A traditional way to distinguish between the different forms of household debt is the split between consumer credit, loans for house purchase and other loans, the latter mainly granted to producer households. In the countries surveyed, mortgages are the most important form of household debt, ranging in 2008 from 43 of total loans in Italy to 78% in the US. Consumer credit is generally the second form of household debt by size, but not in Italy, Germany and Spain where "other loans to households" are more

[8] Some authors have investigated the correlations between subprime mortgage growth, construction of new houses and increase in home prices (Mayer and Pence 2008). Other scholars have found that delinquencies related to subprime mortgages in 2007–08 were linked to past credit growth, in terms of number and volume of originated loans (Dell'Ariccia et al. 2008). There is evidence that the rapid growth in the supply of mortgages to high-risk borrowers can explain much of the large variations in house prices and the connected dynamics of defaults (Mian and Sufi 2008). Gorton (2008) has shown that the chain of interlinked securities related to the subprime market was sensitive to house prices; that asymmetric information was created by complexity, and risk was spread in an opaque way. As far as political economy issues are concerned, Mian et al. (2010) have shown that subprime mortgage lenders and borrowers were able to influence government policy towards housing finance.

Table 4.10 Household net financial wealth: ratio to disposable income

	Italy	France	Germany	Spain	UK	US	Japan
1995	2.2	1.5	1.1	1.6	3.0	3.1	2.8
1996	2.3	1.7	1.2	1.7	3.0	3.2	2.9
1997	2.6	1.8	1.3	1.8	3.4	3.5	2.8
1998	3.0	1.9	1.4	2.0	3.5	3.7	2.9
1999	3.1	2.2	1.4	2.1	4.0	4.2	3.2
2000	3.2	2.1	1.4	1.8	3.7	3.6	3.3
2001	3.0	2.0	1.4	1.7	3.2	3.2	3.3
2002	2.9	1.9	1.4	1.5	2.6	2.7	3.3
2003	2.8	2.0	1.5	1.6	2.6	3.1	3.5
2004	2.9	2.0	1.6	1.5	2.7	3.2	3.5
2005	3.0	2.1	1.7	1.6	3.0	3.4	3.8
2006	3.0	2.2	1.8	1.7	3.1	3.5	3.9
2007	2.9	2.2	1.9	1.5	3.0	3.5	3.8
2008	2.7	1.9	1.7	1.1	2.4	2.6	3.6
2009	2.8	2.1	1.9	1.2	2.8	2.8	3.7

important, reflecting loans to small firms. The maturity of loans to households is crucial for the possible consequences for financial stability, together with the prevalence of variable interest rates in some countries.

Finally, we present some international comparisons of net financial wealth (Table 4.10) computed as the difference between total financial assets and financial debt. In Sect. 4.2 we saw that household gross financial wealth is greater in Japan, the UK and the US than in the euro-area countries, among which Spain has the lowest levels. The consideration of debt provides a different picture. With regard to net financial wealth, Japanese households maintain their first place. With low debt, Italian net financial assets are now in line with English and the American values. In the euro area, Spanish households – because of their great indebtedness – are even further from the French and Germans. During 2008, the crisis produced a larger deterioration in net financial assets in the UK and the US and a smaller collapse in the euro area markets.

4.5 Household Real Assets and Household Total Net Worth

With the exceptions of the US and Japan, real assets are more important for households than financial wealth in the main OECD countries. Real assets include dwellings, land, valuables, non-residential buildings and plant and machinery. The degree of harmonization of data is lower than the statistics on financial assets and liabilities and caution must be exercised in the analysis. We concentrate on total real assets because the single components of wealth are not always available in all the countries. However, dwellings (or real estate) are the most important component in most countries; percentages reach 80% in the UK, the US and Italy.

The recent collapse of house prices following the previous strong increase gave a new impetus to the classic study of the links between the housing sector and the rest of the economy. A first issue concerns the effect of an increase in house prices on consumption. On the one hand, a rise in housing prices might alleviate financial "frictions", such as collateral constraints, in those financial systems where equity mortgage withdrawal exists. Thus, debtors would borrow more funds against the increased values of houses and might spend more. But an increase in house prices also produces a rise in the price of housing services that owner-occupiers would have spent had they been renting (ECB 2009). As a result, economic agents might reduce their demand for housing services as a consequence of an increase in house prices. This effect is influenced by the relative proportion of owners, often older people, and tenants, often younger in age, in the economy. As synthesized by Buiter (2008), changes in house prices can influence consumption if the marginal propensity to consume out of wealth is different between those "long in housing", typically the old, and those "short in housing", typically the young.

Another issue concerns the different effects of financial and real wealth on consumption. In the past, the propensity to consume from net financial wealth was considered to be larger than the propensity to consume from real wealth. Recent studies provide mixed evidence. A last line of research looks at a weaker effect on consumption of real wealth in the euro area than in the US and the UK because the latter countries have stronger market-based mortgage markets. Financial innovation, such as MEW, influences the transmission of housing price shocks. Moreover, other studies have not been able to detect for the housing-consumption link a clear distinction between Anglo-Saxon financial systems and the more traditional bank oriented structures (see Altissimo et al. 2005, and De Bonis and Silvestrini 2012 for evidence of the different empirical results).

In recent years, the development of housing wealth has had a close link with the evolution of residential property prices. From 1995 to 2007 house prices increased in all the main OECD countries, but not in Japan and Germany. This increase was particularly strong in the UK, Spain and France. In 2008 and 2009 the real house price indices decreased in all the seven countries under examination.

For an analysis of the ratio of real assets to disposable income the countries may be divided into three groups (see Table 4.11). The first group of countries, which have high values of real wealth, includes Spain, the UK, France and Italy. Household real wealth reaches its maximum value in Spain, where it is around eight times disposable income. Real assets have traditionally been important in Spain, reaching a high level in international comparisons already in 1995. Since the end of the 1990s the growth of loans to Spanish households has been the highest in the euro area. Given low interest rates, the strong demand for mortgages has been sustained by the rise in house prices, the real index of which more than doubled between 1998 and 2007.

In the same period, the UK, where household real wealth is about five times disposable income, was the country that experienced the largest increase in house prices, with a key contribution coming from an inelastic housing supply (OECD 2005); there was also a rise in the price-rent ratio and a spatially concentrated demand, given the major role of London as a financial and business centre.

Table 4.11 Household non-financial assets: ratio to disposable income

	Italy	France	Germany	Spain	UK	US	Japan
1995	3.9	2.9	2.9	4.2	2.8	1.6	4.3
1996	3.9	2.9	2.9	4.1	2.9	1.6	4.2
1997	4.0	2.9	2.9	4.1	2.9	1.6	4.1
1998	4.1	2.9	3.0	4.2	3.1	1.7	4.0
1999	4.0	3.1	3.0	4.6	3.4	1.7	4.0
2000	4.1	3.3	3.0	4.8	3.7	1.9	3.9
2001	4.1	3.4	3.0	5.3	3.7	2.0	3.8
2002	4.3	3.6	3.0	6.1	4.3	2.0	3.6
2003	4.6	4.1	3.1	6.9	4.6	2.2	3.5
2004	4.7	4.6	3.1	7.8	5.0	2.3	3.3
2005	4.9	5.1	3.2	8.5	5.0	2.6	3.2
2006	5.2	5.5	3.3	8.9	5.2	2.5	3.3
2007	5.4	5.5	3.4	9.0	5.6	2.3	3.3
2008	5.4	5.3	3.3	8.5	4.8	1.8	3.2
2009	5.6	5.1	3.3	8.0	4.9	1.7	3.2

In general, new housing supply tends to be more rigid in the UK and continental Europe and relatively flexible in North America.

In France, the increase in house prices – similar to that in Spain – has been ascribed to the growing number of families and the strong concentration of inhabitants in Paris. According to Gervais (2007), French households also face a high opportunity cost of renting instead of buying; legislation allows rents to be indexed to construction prices.

In Italy, as in France, household real assets are around five times disposable income, but the increase in house prices has been lower than in the UK, Spain and France. The high ratio of real assets to disposable income has different explanations. Traditionally houses have been seen as safe investments against high inflation in the 1970s and 1980s. Housing was considered part of the retirement strategy of an ageing population, worried by the never-ending reforms of the public pension system. The stock market difficulties between 2000 and 2003, together with large and well publicized corporate and sovereign bond defaults, also provided incentives for rising house demand and prices. Finally, the imperfections in the market for rented property probably stimulated house purchases.

A second group of countries includes Germany and Japan, where household real wealth is about three times disposable income. Eymann and Borsch-Supan (2002) have noted that German households have low holdings of real estate. In Germany, house prices have remained stable. Traditionally, the country has a large social housing sector. The owner-occupation rate is around 44%, a smaller percentage compared with other countries. Another factor has been the low prices prevailing in former East Germany (ECB 2003). In Japan, general deflation and a particularly sharp decline in land prices caused a decrease in national wealth during the 1990s. In 1995, Japanese households had the highest ratio of non-financial assets to

disposable income; this ratio is now only larger than the ratio in the US. Analyses in Japan look further at the interaction between population ageing, portfolio choices and investment in real assets (Iwaisako 2003).

Finally, household non-financial assets are lower in the US than in the other countries, with a value around twice that of disposable income. The literature has investigated the explanations for the rise in American housing prices between 1998 and 2006. Soaring home prices were mainly a coastal phenomena, affecting metropolitan areas where the supply of new houses is restricted and where the long-run average appreciation rate attracts rich people to these "superstar" markets. But the increase in house prices left the internal states of the US largely untouched. There is a huge quantity of cheap land in the US, which may explain why "housing remains and will remain inexpensive in most areas of the country" (Glaeser 2004; see also Glaeser et al. 2005). The US also has an extremely low population density (31 inhabitants per kilometre). But there are still unresolved puzzles. The boom of house prices occurred in cities where the supply is not restricted – such as Phoenix and Las Vegas – and where the occurrence of a bubble was testified by a growing gap between house prices and fundamental production costs (Gyourko 2009). House prices began decreasing in the second half of 2007. The Case-Shiller index of house prices fell by more than 18% between March 2008 and March 2009: this fall in prices was larger than the drop in 1932, at the worst point of the Great Depression. The Case-Shiller price index has been rising since mid-2009, but at the beginning of 2010 house prices were 30% below their 2006 peak levels. In the US, there are signs of a stabilization of the housing market, but most of the sector indicators remain near record low levels.

Adding household real assets to net financial wealth it is possible to compute total household net worth. Table 4.12 shows that the highest level of the ratio of

Table 4.12 Household net worth: ratio to disposable income

	Italy	France	Germany	Spain	UK	US	Japan
1995	6.2	4.4	4.0	5.8	5.7	4.7	7.1
1996	6.2	4.6	4.1	5.8	5.8	4.8	7.1
1997	6.7	4.7	4.2	5.9	6.3	5.1	7.0
1998	7.0	4.8	4.3	6.2	6.7	5.4	6.9
1999	7.1	5.3	4.4	6.6	7.4	5.9	7.1
2000	7.3	5.4	4.4	6.6	7.4	5.5	7.1
2001	7.1	5.4	4.4	7.0	6.9	5.2	7.1
2002	7.2	5.5	4.4	7.6	6.9	4.8	6.9
2003	7.4	6.0	4.5	8.5	7.2	5.2	6.9
2004	7.6	6.6	4.7	9.4	7.6	5.6	6.9
2005	8.0	7.2	4.9	10.1	7.9	6.0	7.1
2006	8.1	7.7	5.1	10.6	8.3	6.1	7.2
2007	8.2	7.8	5.3	10.5	8.6	5.8	7.1
2008	8.1	7.2	5.1	9.6	7.3	4.4	6.8
2009	8.4	7.2	5.2	9.2	7.7	4.6	6.9

household net worth to income is found in Spain, with a value around nine times disposable income. This result is driven by the record stock of real assets. Italy has a ratio around eight times disposable income, followed by France and the UK, with values around seven: these countries have intermediate levels of both financial and real assets. In Japan, net worth is less than seven times disposable income. Levels around five are found in Germany and the US. Germany has relatively low financial assets and, especially, real wealth. In the US, housing wealth is at the lowest levels. For net worth, the collapse of 2008 and the recovery of 2009 were stronger in the UK and the US than in most of the European countries. Spain had a peculiar experience because the strong decrease in house prices implied a decline in net worth also in 2009.

4.6 Evidence from Micro Data

So far we have examined household wealth using the national financial accounts. These macro statistics do not contain information about the distribution of assets and debt among different individuals and families and about wealth concentration. For a more comprehensive analysis of household investment choices it is important to look at the micro information, mainly collected through surveys conducted by the national statistical offices and central banks. Micro data, where available, provide different insights. The case of Italy is a useful example. Excluding insurance reserves and pension funds, three quarters of Italian households either have no financial assets (11%) or just hold a deposit (63%; see Bank of Italy 2010).[9] Discussions on the riskiness of the portfolio, particularly on the ups and downs of shares and mutual funds, affect only a small fraction of the population.

Few countries run surveys on household wealth, so that international comparisons are difficult to carry out.[10] The only attempt available is the Luxembourg Wealth Study (LWS), a collaborative project to assemble existing micro data on household wealth into a coherent database (Sierminska et al. 2006).[11] Even if data refer only to 2000–2002, due to the resilience of this information it is still worth looking at the evidence of the LWS. Another important caveat refers to the partial comparability of these results: when looking at household asset participation, a threshold of 2,500 euros has to be adopted to enhance comparability, as the Germany survey records only values exceeding this amount (see Table 4.13). With respect to our set of

[9] Caution must be exercised when trying to bridge micro data with the evidence provided by financial accounts. The two datasets cannot be matched because of different asset definitions and valuations, together with possible under-reporting in the survey (see Bonci et al. 2005).

[10] The ECB is currently working on a project aiming at collecting harmonized micro data on household finance and consumption.

[11] The LWS project was official launched in 2004, with nine participants: Canada, Cyprus, Finland, Germany, Italy, Norway, Sweden, the United Kingdom, and the United States. Austria also joined in spring 2006.

Table 4.13 Household asset participation (percentages)

	Germany[a]	Italy[b]	UK[c]	US[d]
Non-financial assets	43	72	70	70
Principal residence	39	69	69	68
Investment real estate	13	22	8	17
Financial assets	50	81	80	91
Deposit accounts	–	81	76	91
Bonds	–	14	–	19
Stocks	–	10	–	21
Mutual funds	–	13	–	18
Debt	30	22	59	75
Home secured debt	–	10	39	46
Only financial assets and non-housing debt exceeding 2,500 euros				
Non-financial assets	43	72	70	70
Financial assets	49	70	58	60
Total debt	30	17	49	65

Source: Jantti et al. (2008)
[a]Social Economic Panel Study 2002
[b]Survey on Household Income and Wealth 2002
[c]British Household Panel Survey 2000
[d]Survey of Consumer Finances 2001

countries, we have information from the LWS only for Germany, Italy, the UK and the US. These data confirm some of our previous results and, most importantly, add some further information.

Table 4.13 (lower part) confirms that the percentage of indebted households is higher for the UK and the US (49 and 65 respectively), while it is lower in Germany and especially in Italy. By contrast, 70% of Italian households hold financial assets over 2,500 euros; the percentage is lower for the UK and US (around 60%) and much lower for Germany (49%). In the light of the different development of financial markets, shares and mutual fund holdings are less widespread in Italy than in the US (the only two countries for which we have this type of evidence). In 2002 only 10% of Italian households had shares, while the percentage was double in the US; the difference is less striking for mutual funds (13% for Italy against 18% for the US). Households that own their principal residence are very few in Germany and more numerous in the other countries.

Because of the large diffusion of debt in the UK and the US, the quota of households with a negative net worth – i.e. financial liabilities larger than the sum of real and financial assets – amounts to 11 and 19% respectively (see Table 4.14).

Probably the most important new information provided by micro data concerns wealth concentration. Using the Gini index, concentration is higher in the US and Germany (the coefficient equals 84 and 78 respectively) than in the UK (66) and Italy (61). More accurate information is provided by the breakdown of wealth shares by wealth percentiles. In the US the richest 10% of the people possess 71% of total wealth, while the indicator is lower for Germany (54), UK (45) and

Table 4.14 Distribution of household net worth (percentages)

	Germany[a]	Italy[b]	UK[c]	US[d]
Positive net worth	63	89	82	77
Nil net worth	29	7	6	4
Negative net worth	9	3	11	19
Wealth Shares				
top 10%	54	42	45	71
top 5%	36	29	30	58
top 1%	14	11	10	33
Gini index	78	61	66	84

Source: Jantti et al. (2008)
[a]Social Economic Panel Study 2002
[b]Survey on Household Income and Wealth 2002
[c]British Household Panel Survey 2000
[d]Survey of Consumer Finances 2001

Italy (42). A more recent study (Davies et al. 2009) provides some evidence about the countries of our sample: in 2002, the top 10% of households in terms of wealth held 42% of total wealth in Spain; in Japan the percentage amounted to 39% in 1999. For France, the most recent data (2003) also show a low concentration (38%) with respect to the other countries examined (Insee 2006). In a nutshell, total wealth concentration seems to be higher in the US and Germany than in the other major European countries and Japan.

4.7 Some Correlations between Household Wealth and Economic Indicators

Economic theory does not offer a comprehensive view of the determinants of household wealth. We start with correlations between wealth and some indicators: household saving rate, general government gross financial liabilities, GDP per capita, international trade share (exports plus imports as a percentage of GDP), unemployment rate, tax revenue and social security contributions, current and total public expenditure (excluding interest payments), and the elderly ratio (or elderly dependency ratio). We leave to future research an analysis of the causal links. All the series have been de-trended to account for possible confounding effects of common trends. The small sample sizes have forced us to focus on business cycle frequencies.

Table 4.15 shows the correlations between total household net wealth and our indicators for the seven countries under scrutiny. Table 4.16 reports the correlations between household net financial wealth and the same indicators. For each indicator, the tables show the correlation coefficient and the corresponding p-value. Here we summarize our main results.

First, the correlation coefficients between saving and total net wealth are statistically significant in four countries; for net financial assets we got two significant

Table 4.15 Correlations between total net worth[a] and some macroeconomic indicators[b]

	France	Germany	Italy	Japan	Spain	UK	US
Net saving rate	−0.569	0.249	−0.736	0.449	0.150	−0.557	−0.545
	(0.000)	(0.411)	(0.003)	(0.143)	(0.610)	(0.038)	(0.044)
Government liabilities	0.179	0.022	0.446	0.026	−0.652	−0.340	−0.411
	(0.847)	(0.940)	(0.110)	(0.927)	(0.011)	(0.234)	(0.144)
GDP per capita[c]	−0.095	0.881	−0.142	0.525	0.626	0.239	0.392
	(0.759)	(0.000)	(0.629)	(0.054)	(0.017)	(0.411)	(0.165)
International trade	−0.339	0.522	0.071	0.126	−0.581	−0.363	−0.084
	(0.236)	(0.067)	(0.811)	(0.667)	(0.029)	(0.202)	(0.776)
Unemployment rate	0.643	0.026	0.495	0.158	0.044	0.396	0.697
	(0.013)	(0.931)	(0.072)	(0.590)	(0.881)	(0.161)	(0.006)
Tax revenue and social security contributions	0.172	0.254	0.186	–	0.596	0.292	–
	(0.557)	(0.402)	(0.525)	–	(0.024)	(0.311)	–
Current public expenditure	0.355	−0.759	−0.240	−0.334	0.044	−0.481	−0.645
	(0.213)	(0.003)	(0.409)	(0.288)	(0.884)	(0.082)	(0.013)
Total public expenditure	0.475	−0.639	−0.247	–	0.144	−0.632	
	(0.086)	(0.019)	(0.395)	–	(0.624)	(0.015)	–
Elderly population ratio	−0.017	0.517	0.245	0.053	−0.642	−0.749	−0.481
	(0.954)	(0.071)	(0.400)	(0.857)	(0.013)	(0.002)	(0.082)

[a]Ratio of total net worth to disposable income as reported in Table 4.12
[b]p-values in parenthesis
[c]Correlation with respect to total net worth per capita here

Table 4.16 Correlations between net financial wealth[a] and some macroeconomic indicators[b]

	France	Germany	Italy	Japan	Spain	UK	US
Net saving rate	−0.310	−0.106	−0.916	0.057	0.519	−0.614	−0.497
	(0.281)	(0.718)	(0.000)	(0.860)	(0.057)	(0.019)	(0.071)
Government liabilities	−0.193	0.208	0.294	0.534	0.278	−0.010	−0.312
	(0.508)	(0.476)	(0.307)	(0.049)	(0.335)	(0.968)	(0.278)
GDP per capita[c]	0.000	0.575	0.268	0.022	−0.014	−0.149	0.495
	(0.985)	(0.032)	(0.355)	(0.940)	(0.961)	(0.612)	(0.072)
International trade	0.554	0.432	−0.035	−0.301	0.562	−0.097	0.157
	(0.040)	(0.123)	(0.907)	(0.296)	(0.036)	(0.742)	(0.592)
Unemployment rate	0.028	0.152	0.563	0.151	−0.696	0.358	−0.849
	(0.926)	(0.605)	(0.036)	(0.607)	(0.006)	(0.209)	(0.000)
Tax revenue and social security contributions	0.838	0.376	−0.108	–	0.616	0.718	–
	(0.000)	(0.185)	(0.713)	–	(0.019)	(0.004)	–
Current public expenditure	−0.481	−0.398	−0.331	−0.010	−0.638	−0.716	−0.765
	(0.082)	(0.159)	(0.248)	(0.980)	(0.014)	(0.004)	(0.001)
Total public expenditure	−0.528	−0.401	−0.455	–	−0.680	−0.729	–
	(0.052)	(0.155)	(0.102)	–	(0.007)	(0.003)	–
Elderly population ratio	0.022	0.677	0.718	−0.485	0.427	0.671	−0.266
	(0.942)	(0.462)	(0.004)	(0.079)	(0.128)	(0.009)	(0.359)

[a]Ratio of net financial wealth to disposable income as reported in Table 4.10
[b]p-values in parenthesis
[c]Correlation with respect to net financial wealth per capita here

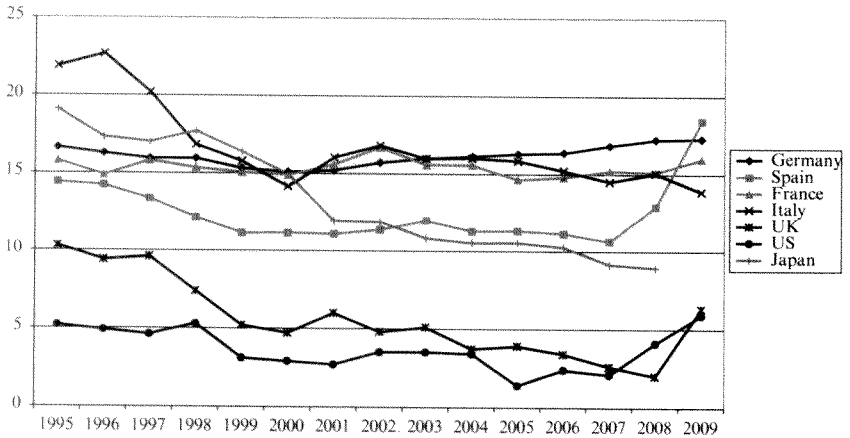

Fig. 4.2 Household saving rate (Percentages)

correlations. The correlations are always negative when significant at a confidence level of 95 per cent. This result is in line with the existence of a "wealth effect": people saved less because their wealth increased. This seems to be the case of Italy, the UK, the US and France. Recent research has investigated the idea that price bubbles increased household net worth and were at the origin of low saving rates in Anglo-Saxon countries.[12] Saving rates show a sharp difference between the UK and the US (Fig. 4.2), where household saving was about 6% of disposable income in 2009, and Europe, ranging from 18% in Spain, to 14% in Italy, with Japan at 9%. Analysis points to the combination of declining saving rates and large fiscal deficits in Japan.[13]

We also run some panel regressions to measure the overall link between wealth and saving in our countries. First, we regressed total net wealth and net financial wealth on saving, accounting for country and time dummies (see Table 4.17). We found a positive significant influence of saving only on total net wealth. However, the partial correlation coefficient is very low (0.223). This result is compatible with the idea that in recent years wealth variations have been more linked to price

[12] "The decline in the saving rate over the past decade can be explained by the decline in interest rates and by the increase in overall household wealth", Greenspan 2005.

[13] "Japan's ability to sustain high fiscal deficits, low interest rates, and net capital exports has been possible because of its high private saving rate, which has kept national saving positive. But, with the current low rate of household saving, the cycle of rising deficits and debt will soon make national saving negative. A shift from deflation to low inflation would accelerate this process. The result in Japan would then be rising real interest rates as the low private saving rate runs head-on into large fiscal deficits. That would weaken the stock market, lower business investment, and impede economic growth. And if Japan's domestic net saving surplus vanishes, the current $175 billion of capital outflow would no longer be available to other countries, while Japan might itself become a net drain on global savings." (Feldstein 2010).

Table 4.17 Results from regressions[a] of net worth and net financial wealth on net saving

	Dependent variable			
	Net worth[b]		Net financial wealth[c]	
Coefficient:				
Intercept[d]	3.453	(0.000)	1.845	(0.000)
Net saving	0.084	(0.041)	−0.013	(0.447)
Dummy				
1996	0.261	(0.474)	0.045	(0.765)
1997	0.497	(0.175)	0.244	(0.110)
1998	0.779	(0.036)	0.399	(0.010)
1999	1.254	(0.001)	0.634	(0.000)
2000	1.255	(0.002)	0.470	(0.004)
2001	1.165	(0.003)	0.282	(0.078)
2002	1.178	(0.003)	0.070	(0.653)
2003	1.569	(0.000)	0.186	(0.243)
2004	1.960	(0.000)	0.229	(0.158)
2005	2.389	(0.000)	0.388	(0.020)
2006	2.678	(0.000)	0.464	(0.006)
2007	2.760	(0.000)	0.417	(0.015)
2008	2.234	(0.000)	−0.072	(0.676)
Germany	−1.155	(0.000)	−0.506	(0.000)
Italy	1.389	(0.000)	0.857	(0.000)
Japan	1.526	(0.000)	1.274	(0.000)
Spain	1.162	(0.015)	−0.169	(0.377)
UK	2.213	(0.000)	0.979	(0.000)
US	0.141	(0.742)	1.253	(0.000)
Partial correlation coefficient between net saving and the dependent variable				
	0.223	(0.041)	−0.015	(0.447)

[a] p-values in parenthesis
[b] Ratio of total net worth to disposable income as reported in Table 4.12
[c] Ratio of net financial wealth to disposable income as reported in Table 4.10
[d] Dummies for 1995 and France are included in the intercept

changes than to saving accumulation. The country dummies are significant, meaning that institutional characteristics of each nation and their heterogeneity may explain the weak association between wealth and saving. We also regressed the variations of total net wealth and net financial wealth on saving to consider flows on both sides of the equations. However, the results, available on request, illustrate that the effect of saving is not significant.

Coming back to the correlation analysis, there are mainly negative correlations between wealth and current and total public expenditure. A tentative interpretation may be that households accumulate assets in countries where public expenses are lower. We did not find a strong positive association between GDP per capita and wealth per capita. We obtained neither a negative link between the elderly population ratio and the accumulation of wealth. This is in contrast with previous studies

that sometimes found a positive relationship between house prices and GDP per capita and a negative linkage between asset prices and the elderly ratio (see for instance Takats 2010). For the other indicators there are no strong associations with household wealth. At this stage the future investigation of the determinants of household wealth might start from the role of saving and public expenditure to pursue the effect of other variables.

4.8 Further Discussion and Conclusions

We first summarize our main results and then provide some further comments on household wealth trends and determinants.

With regard to gross financial wealth, the seven countries can be divided into two groups. On one side there are the Anglo-Saxon economies and, to a lesser extent, Japan. On the other side there is continental Europe. The UK and the US are market-based financial systems: the huge development of the stock market leads to the predominance of market instruments in household portfolios, but also to greater risks. These characteristics, together with a well-developed private pension fund sector, yield higher values of household total financial assets. On the other hand, countries in continental Europe, traditionally bank-based, show lower levels of total assets, but greater saving rates. Japan, where banks play a predominant role in the economy, falls between the two groups in many respects. Wider financial markets enlarge investment opportunities but may involve higher price volatility. Indeed, in 2008 the crisis caused a greater decline in financial wealth in the US, the UK and Japan than in the euro-area countries. The composition of financial assets in Europe was more in favour of safe instruments, like deposits and securities, especially in Italy.

In the last 15 years, all countries have experienced a common trend of financial deepening, driven by deregulation and international integration. Some authors have suggested the existence of convergence in the composition of financial assets across countries, but this remains an open issue.

The explosion of household debt before the financial crisis was seen as a way to improve inter-temporal allocation. More cautious considerations have subsequently been expressed because of the subprime crisis and the global recession. Household debt remains very high in the UK, Japan, Spain and the US, and it is smaller in the other countries. Taking into account low indebtedness, the net financial wealth of the Italian households is very near that of UK and American households; Spanish households have the lowest value of all the countries. The surveillance of household debt is now on the policy agenda.

Spain is a special case in the euro area, with its large household debt linked to the outstanding level of real assets. Household real wealth is also important in France, Italy and the UK. Real assets are lower: in Japan, in large part because of the bursting of the housing bubble of the 1980s; in Germany, where private ownership of houses is low; and especially in the US. Monitoring of real-estate volumes and prices is important as boom and busts in the housing sector may affect the real

Total household net worth is very high in Spain and reaches intermediate levels in Italy, France and the UK. It is lower in Japan, and shows the lowest levels in Germany and the US. In some countries – e.g. Spain and the US – financial wealth is crowded out by real assets and vice-versa. On the contrary, in the UK financial and real assets appear to be complementary rather than substitutes.

Micro data show that wealth concentration is highest in the US and Germany. An explanation is that the two countries have the lowest values of real wealth. Moreover, financial wealth concentration is greater than that of real assets. Therefore economies with lower real wealth have, relatively, greater financial wealth and are consequently more prone to a higher concentration of total wealth.

In the long run, wealth is linked to the accumulation of saving and is influenced by capital gains and the trend in house prices. However, correlations between the saving rate and wealth were negative in most of the countries in the time range 1994–2009. This is compatible with the idea that in the years of rising share and house prices, i.e. in most of the period 1995–2007, people saved less because their wealth increased. Taking into account our sample of countries, a panel regression shows a small impact of the saving rate on the ratio of total wealth to disposable income. We also found in some countries a negative association between household wealth and current public expenditure, perhaps because households accumulate more assets where State expenses are smaller.

We do not have many analyses of why countries have different levels of household wealth. Among the possible factors to consider are institutional characteristics of the financial and banking markets, saving rates, pension systems, legal origin of finance, taxation, weight of the shadow economy, linkages between households and other institutional sectors, such as general government, and demographic trends.[14] These subjects are on our research agenda.

Statistical Appendix

The household sector includes non-profit institutions serving households. Gross disposable income is used to compute the ratios in Tables 4.1, 4.2, 4.10, 4.11 and 4.12. Financial and non-financial data are at current values; therefore they are neither corrected for inflation nor seasonally adjusted.

Tables 4.1, 4.2, 4.3, 4.4, 4.10, 4.12. For European countries, data are based on the European System of Accounts 1995 (ESA95), for Japan and the United States (US) on the United Nations' System of National Accounts 1993 (SNA93). Stock data are those at the end of the year, annual flow data result from the sum of the transactions that occurred in the year. Data are not consolidated, i.e. they include transactions between units belonging to the household sector. The data sources are the financial accounts databases available on the national central banks' websites in

the June 2010 version. The only exception is the UK for which data have been taken from the Office for National Statistics (ONS). In the case of Japan and Germany the main sources have been supplemented with some details available respectively on the OECD and the European central bank's statistical data warehouse.

Tables 4.2, 4.3 and 4.4. Deposits include currency in circulation. Securities other than shares include short- and long-term securities and financial derivatives (whose amount is, however, negligible). Insurance technical reserves include life and non-life insurance claims and net equity in pension fund reserves. For Italy, retirement allowances are included. "Other assets" is a miscellaneous item: ESA95 rules (paragraph 5.120) indicate that this item includes financial claims deriving from a timing difference between the moment in which the transaction takes place and the corresponding payment. Trade credits are classified in this item. In the light of their negligible amounts, loans granted by households are included in this category in France, Italy (loans to co-operatives), Spain (only for 1995), Japan and in the US.

Table 4.3 Flows are different from changes in stocks as revaluations and other changes in volume are not included. The ratio for each period (e.g. 1995–1997) has been calculated between the average amounts of the period.

Table 4.5 In this table, unlike the previous ones, deposits do not include currency. For the European countries, deposits are broken down according to ESA95 categories: transferable deposits and other deposits. Transferable deposits are those immediately convertible into currency or transferable by payment means (e.g. cheques) without any kind of significant restriction or penalty. US transferable deposits correspond to the item "Checkable deposits and currency" in the Federal Reserve's Flow of Funds.

Table 4.6 In this table, shares and other equity include listed shares, unlisted shares, and other equity. The aggregate is not fully comparable across countries because the criteria adopted for the valuation at market prices of unlisted shares and other equity differ. For Germany, the weight of quoted shares is partially estimated using ECB data. Listed shares held by English households are taken from the ONS. For the US, listed and unlisted shares are approximated by the item "corporate directly held equities asset" and other equity by the item "Equity in non-corporate business", both published in the Flow of Funds accounts. For Japan, listed shares correspond to the sub-item "shares" published in the Bank of Japan Flow of Funds (see the Guide to the Flow of Funds, page 66, available on the Bank of Japan website).

Table 4.7 Money market funds are not included. For continental European countries data are taken from the quarterly statistics on mutual funds transmitted by the national central banks to the European Central Bank. For the UK the source is the Investment Management Association (see the Report on Asset management in the UK 2009–2010, published in July 2010). For the US data are taken from the 2010 Fact Book of the Investment Company Institute. For Japan data from the financial accounts of Securities investment trusts have been used.

Tables 4.8 and 4.9. The main source of the data on pension funds and insurance products is the table on Households' financial and non-financial assets and liabilities by country that the OECD has published since 2005. The OECD collects

accounts. Even though definitions are consistent with SNA93 and ESA95, information available has yet to be fully harmonized. The national financial accounts have been used also to estimate the data on 2009 not yet available. Italian households hold other pension plans (severance pay provision) traditionally managed internally by firms and therefore not included in Table 4.8 but reckoned in total household financial assets (Table 4.1)

Table 4.10 Net financial wealth is computed as the difference between total financial assets and financial debt. The latter, differently from total financial liabilities in the financial accounts, basically include only loans and exclude trade debts and other liabilities.

Tables 4.11 and 4.12. Dwellings for Spain, total real assets for all the other countries. For Spain, the UK and the US data updated to 2009 have been taken respectively from the Banco de Espana, the ONS and the Federal Reserve. For Japan the data source is the Cabinet Office. For Italy data are taken from the Bank of Italy's Supplement to the Statistical Bulletin "Household wealth in Italy – 2009". For France and Germany data are taken from the tables on household assets available on the OECD website. The data for 2009 for France, Germany, Italy and Japan have been estimated using statistics on the price dynamics in the housing markets. Net worth in Table 4.12 is computed as the sum of net financial wealth (Table 4.10) and non-financial wealth (Table 4.11).

Figure 4.2. Household saving rate. The household gross saving rate is the ratio of gross saving to gross disposable income for European countries and Japan. For the US the indicator is the ratio of personal saving to disposable income.

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