SOME IMPLICATIONS OF THE CRISES FOR INDICATORS ON NON-FINANCIAL CORPORATIONS AND HOUSEHOLDS[1]

Paul Schreyer

OECD Statistics Directorate

Introduction

1. The implications of the financial crisis that started in the summer of 2008 are reaching well beyond the reform of the regulatory framework for financial institutions, raising questions about the balance between public and private responsibilities and between economic growth and other dimensions of countries' progress. The crisis also questions our capacity to understand the functioning of complex economic systems and the adequacy of our statistical infrastructure to identify structural weaknesses, to value assets and to monitor performance.

2. The statistical implications of the crisis are varied. Some pertain to the triggers of the crisis, such as the collapse of housing prices and the mortgage defaults that followed. Others relate to the structural conditions of economies and financial markets at the onset of the crisis, such as the high leverage of households and financial institutions, the size and features of non-bank intermediaries, the diffusion of over-the-counter instruments and off-balance-sheet entities. Others yet relate to the monitoring of the consequences of the crisis as it unfolds, both for households (*e.g.* capital losses, financial distress) and for firms (*e.g.* access to credit, profitability). The crisis provides an opportunity to assess statistical gaps in each of these fields.

3. This note first highlights some of the key lessons from the crisis, and then describes some of its implications in the fields of economic (non-financial) statistics, on one side, and of social statistics, on the other. On this background, the note identifies some overarching statistical issues in terms of coverage, timeliness, micro-data availability, choice of metrics, story-telling and the shifting paradigms (from 'economic growth' to the broader notion of 'sustainable and equitable well-being').

Features of the crises

4. While most commentators and analysts seem to agree on the "uniqueness" (in post-war history) of the crisis that has shaken the world economy since the summer of 2008, there is not yet a fully-shared

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[1] This note is based on a paper produced by the OECD Statistics Directorate for the June 2009 meeting of the OECD Committee on Statistics.

diagnosis of its nature. Some of the features that are most frequently mentioned as distinguishing the current crisis from previous episodes of financial turmoil include the following:

- First, the crisis started at the centre of the developed world, the United States, rather than at its periphery, as had been the case for previous episodes (Mexico in the early 1980s, Sweden and Japan in the early 1990s, South-East Asia and Russia in the late 1990s, Argentina in early 2000s). From the United States, financial contagion has spread rapidly to other parts of the world and to the real economy.

- Second, the focal point of the crisis is the financial sector, and in particular that "shadow" banking sector whose importance has grown exponentially since the late 1990s beyond the reaches of the regulations and protections that apply to commercial banks.

- Third, the crisis also reflected the existence of an over-stretched household sector, which had accumulated high amounts of debt, especially mortgages. Much of this debt build-up was based on expectations of ever-increasing housing prices. This debt allowed (through mortgage refinancing) to sustain private consumption[2], in a context characterised by stagnant income for most families and by gains concentrated at the top of the income distribution[3].

- Fourth, the speed with which the US financial turmoil was transmitted to other countries and to the real sector worldwide highlights the strong interconnectedness of markets and regions, making this crisis truly "global". The crisis hence underscores that, beyond its benefits, globalisation also implies new vulnerabilities, and inadequacies of existing national policies.

5. The distinctive feature of the current crisis is probably that *all these factors have interacted with each other*, leading to rapid contagion across markets.

A framework for monitoring and indicators

6. The manifestations of the crisis are also varied. Table 1 distinguishes between the various dimensions of the crisis (shown as rows in the table) which, having started as a financial crisis, has then evolved into an economic crisis and a social crisis, with effects spreading to the long term (*i.e.* a sustainability crisis).[4] Each dimension of the crisis affects various sectors of society (financial institutions, non-financial firms, households and general government, shown as columns) through the channels shown as entries in the table. The different timing of these crises, and the links through which various sectors are affected, has implications for statistical work: for example, while a better monitoring of some phenomena (*e.g.* the relationships between financial institutions, or the assessment of their sustainability) may require new data collections and the sharing of information among supervisory-institutions beyond national borders, other phenomena may be assessed using existing (or marginally modified) tools.

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[2]   Klyuev V. and P. Mills (2006), "Is Housing Wealth an "ATM"? The Relationship Between Household Wealth, Home Equity Withdrawal, and Saving Rates", IMF Working Paper, no. 162, International Monetary Fund, Washington D.C

[3]   OECD (2008), Growing Unequal? Income Distribution and Poverty in OECD Countries, OECD, Paris.

[4]   Morris (2007) argues that the crisis may also have geo-political implications, because of the large holdings of US dollars by official authorities and entities in other countries (*e.g.* Sovereign Wealth Funds).

Table 1.Different dimensions and effects of the crisis

Crisis area	Institutional sector			
	Financial corporations	**Non-financial corporations**	**Households**	**Government**
Financial effects	Losses on assets, liquidity risks, solvency risks lower securitization, lower credit rating	Losses in financial wealth (pensions and savings), losses in non-residential property, lower credit rating, credit crunch	Losses in financial wealth (pensions and savings), losses in residential property (real estate), credit crunch	Higher transfers to financial institutions, higher public debt, higher stakes in financial firms, easier monetary policies
Economic effects	Income losses, lower demand and profits, currency runs and related losses	Income losses, lower demand and profits, lower investment, higher inventories, lower foreign trade, currency runs and asset losses	Job losses, income losses, lower confidence, lower consumption, lower remittances, currency runs and asset losses	Higher public expenditure for bailouts, support to non-financial institutions and households, currency runs and related losses
Social effects		Increase in bankruptcies, lower innovation and investment, lower entrepreneurship	Higher poverty, loss of firm specific human capital, , higher vulnerability	Higher social transfers
Sustainability (long-term) effects	Losses in economic and financial capital, lower trust and confidence, lower attention to environmental threats and green/social investment	Losses in economic and financial capital, lower trust and confidence, loss of firm-specific human capital, greater strains in capital/labour relations	Lower spending in education, lower tolerance and trust, greater social dysfunctions, lower attention to environmental threats, lower charitable donations	Higher public debt and bond yields, claims to reconsider mix in pension portfolios, strains on public pensions, lower infrastructure investment, less attention to environmental threats, lower foreign aid

Source: OECD.

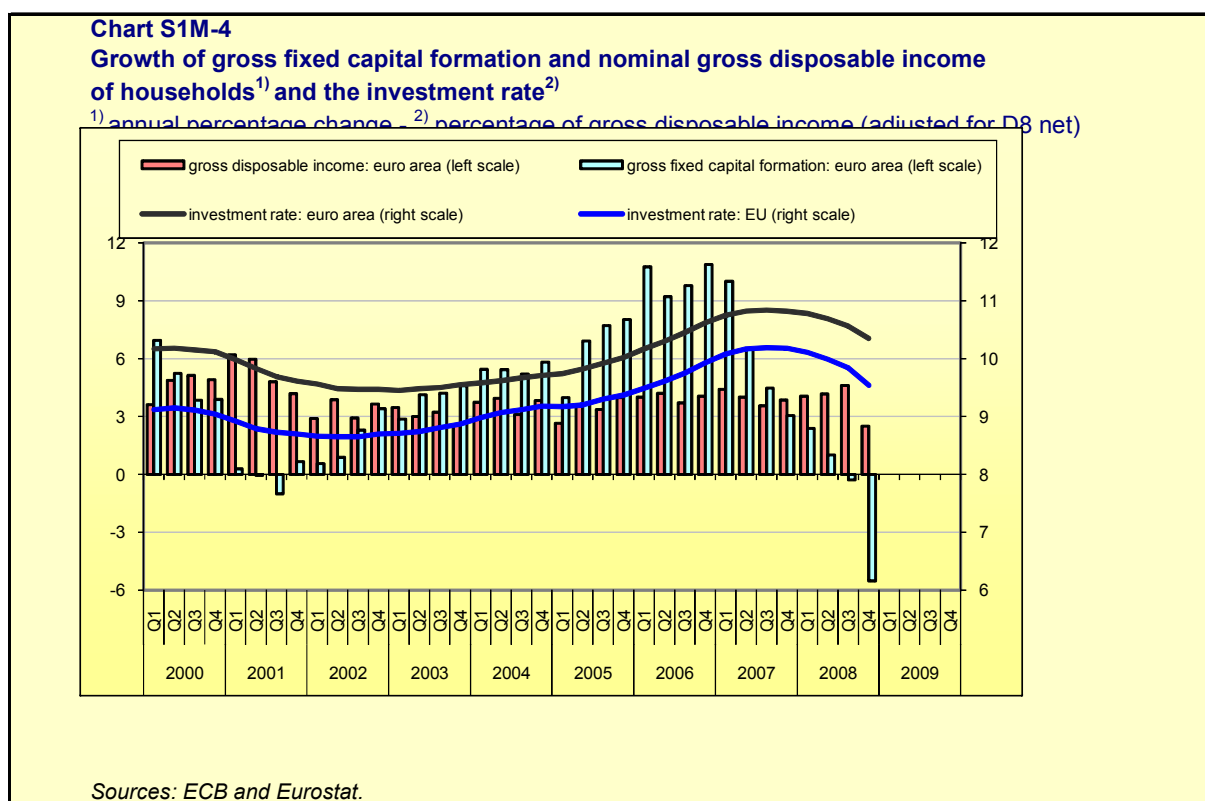## Some statistical implications

Balance sheets, asset prices and accounts of non-financial sectors

7. The crisis is now affecting the real sector of the economy. Economic and financial statistics, as organised and integrated through the SNA play a critical role for assessing both the conditions and vulnerabilities of each country at the onset of the crisis, and the spreading of its effects to the real economy (through the collapse of foreign trade and lower industrial output). It would, however, be disingenuous to believe that the SNA provides all the information needed to understand the current crisis, as policy makers and market analysts have access to a huge amount of statistics: the fundamental challenge is, typically, not *lack of data* but rather to *identify the most relevant* ones and to *interpret them correctly*. Nevertheless, the crisis provides an opportunity to assess whether the current structure of SNA is fully able to provide relevant data. In this respect, it is useful to distinguish

between the ***content*** of the System (as defined in 1993), the ***frequency*** of data collection and the ***timeliness*** with which the data become available.

8. On the contents side, some implications arise. First, and importantly, data on financial and non-financial accounts for all sectors are still missing for many countries and/or are produced with long delays.[5] Special efforts should hence be devoted to developing quarterly financial and non-financial accounts. Developments will have to be pragmatic and possibly start with a small amount of detail but it is desirable that the information be consistent and that the whole sequence of accounts is covered.

9. Quite a bit of headway has been made with quarterly sectoral accounts, including balance sheet information, by the European Union[6]. The data set is unique in that it is quarterly, it covers the whole sequence of accounts, presents information by sector and integrates financial and non-financial flows and stocks. To this point, geographical coverage is limited to European zones: EU 27 and Euro area. But the European model of gathering and presenting quarterly sectoral data is an excellent example for future data developments at the national and international level. The data are accompanied by a selection of graphical presentations of indicators. The figure below provides an example – it shows the development of household non-financial investment (mainly housing) and disposable household income for the Euro area.

Chart S1M-4
Growth of gross fixed capital formation and nominal gross disposable income of households[1] and the investment rate[2]
[1] annual percentage change - [2] percentage of gross disposable income (adjusted for D8 net)

Sources: ECB and Eurostat.

10. Conclusion 1: There are still considerable gaps in quarterly sectoral data. Special efforts should be devoted to developing quarterly accounts for main sectors within a reasonable delay.
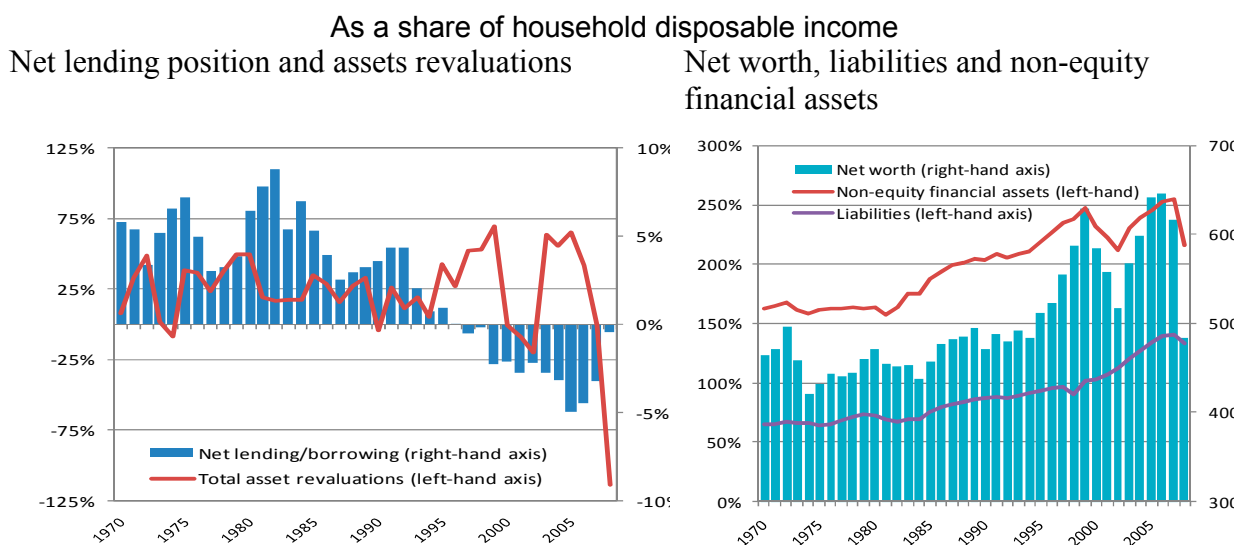
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[5]   Full sets of quarterly account data for all institutional sectors are available for the United States and the Euro area.

[6]   http://epp.eurostat.ec.europa.eu/portal/page/portal/sector_accounts/data/ESA95_format

Testing vulnerability

11. Even when quarterly sector accounts are available, some important limitations remain. Consider, for example, national accounts data on the financial position of households for the United States. These data highlight the interplay of the various factors underlying the build-up of household debt in the United States. Households moved from a net lender to net borrower position in the mid-1990s (left-hand panel of Figure 1), due to higher physical investment and lower savings. However, the impact of this higher debt on household balance sheet was muted because of the (equally large) revaluations of household assets. Household net worth (as percentage of household income) remained at comfortable levels until 2006, declining since then due to lower house and stocks prices (right-hand panel of Figure 1). Holdings of liquid assets such as deposits, credit market instruments and other non-equity assets still exceeded the value of outstanding liabilities, at least on average, in 2008. From this perspective, the accumulation of household debt could have appeared as 'normal', as any judgement on the sustainability of this development would have required assessing the vulnerability of household balance sheets under different scenarios for asset-prices. Aggregate SNA data obviously failed to uncover the extent to which a large number of households were facing risks of negative equity (*i.e.* a value of outstanding mortgages in excess of that of their residence) in the event of small declines in house prices: when this risk did materialise, most of these households sold their houses, rather than trying to meet their debt obligations, which led to further declines in house prices. These vulnerabilities cannot obviously be gleaned based on SNA data for the household sector as a whole.

Figure 1. Net lending, revaluations and balance sheet of the household sector, United States

As a share of household disposable income

Net lending position and assets revaluations   Net worth, liabilities and non-equity financial assets

Source: OECD Financial Statistics.

12. Conclusion 2: more efforts should be made to capture the vulnerability of households' (and possibly non-financial corporations') balance sheets to shocks in asset prices. This may require disaggregating household sector accounts by type of household.

13. Assessing vulnerability requires reasonably reliable valuation of assets, in particular dwellings owned by households. While most countries dispose of physical information on the stock of dwellings, there are many gaps in the information needed to value these stocks. Prices should reflect differences

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in location and quality of dwellings and neither the marginal costs of characteristics of dwellings nor the information about the characteristics of the stock itself are always available. What is true for a valuation at a particular point in time also holds for price indices of dwellings. These are required to examine balance sheet developments over time, and to single out revaluation effects from volume changes. Dwelling price indices of good quality are rare in many countries and there are many uncertainties how to measure depreciation, how to account for maintenance and how to set up dwelling price indices in the first place. Finally, there is a need for separate price indices for structures and the land under them.

14. Conclusion 3: a key ingredient for good information about household wealth, its change over time and for the vulnerability of households' financial position is data on the stocks of dwellings (with a distinction between land and structures) and the associated price levels and their changes over time. Where data exists, its international comparability is limited and establishing international guidelines for dwelling price measurement is a first important step towards improving this situation[7].

Social statistics

15. As the crisis unfolds, its social impacts are becoming more evident. While the financial crisis took analysts and statisticians by surprise, and the economic crisis can be adequately monitored with existing tools, it is urgent to evaluate what actions are needed to enhance our capacity to monitor these social impacts. A crisis, especially if long and deep, can change the social conditions of people in a short period of time while, conversely, a long period may be needed to unwind its effects. Current developments are putting stress on the whole system of social statistics, largely built on the assumption that social change happens slowly and can be monitored through low-frequency household surveys.

Statistics on household income

16. The first area where existing tools appear unable to respond to users' needs is that of **monitoring trends in poverty and income inequality**. The patterns highlighted by statistics on household income over the last few years are often quoted as one of reasons for the fragility of the economic system. Since the early-2000s, several OECD countries experienced a concentration of income growth at the top of the distribution, with poorer and middle-class households falling behind (OECD, 2008). Many of these households, at least in some OECD countries, sustained their consumption and living standards through debt. While this debt may be partly related to the liberalisation of financial markets, and to the lifting of credit constraints that had previously applied, it also reflected a failure by households to fully understand their perspective obligations and the risks inherent in asset price developments.

17. The attention paid to income inequalities is not fading away as the crisis unfolds, as witnessed by public scrutiny surrounding corporate pay in industrial firms and financial institutions that are downsizing or benefitting from public support. It is difficult to say, *a priori*, how income inequalities will develop in the near future. Capital gains and losses, which represent the most direct channel through which the financial crisis affects households, are mainly concentrated among the very rich, but they are also rarely included in income definitions[8]. Conversely, as the effects of the financial crisis

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[7]   A Manual on the measurement of dwelling prices is currently being developed by a group of experts under the Inter-secretariat working group on price statistics and with the sponsorship of Eurostat.

[8]   The 2001 Canberra Manual on the measurement of household income recommended their exclusion.

are transmitted to the real economy, job losses, lower working hours and earnings are impairing the living conditions of many families, at the same time as welfare programmes come under stress because of higher numbers of benefit claimants, lower revenues and higher outlays for financial-rescue packages. In any case, it would be wrong to draw much comfort from lower income inequalities (if these were to materialise) when they result from income losses that are smaller at the bottom of the distribution than at the top: *changes in absolute income also matter* for living conditions, and this both in years of economic expansion and in years of recession.

18. Recent work by France's statistical office, INSEE, provides an excellent example for how aggregate household information can be broken down by type of household, including by income quintile. On the basis of this differentiation, various household-related indicators were computed. Large differences between types of households became apparent, for example in terms of the savings rates (see Figure below).

Figure 2. Savings ratios by quintile of household income
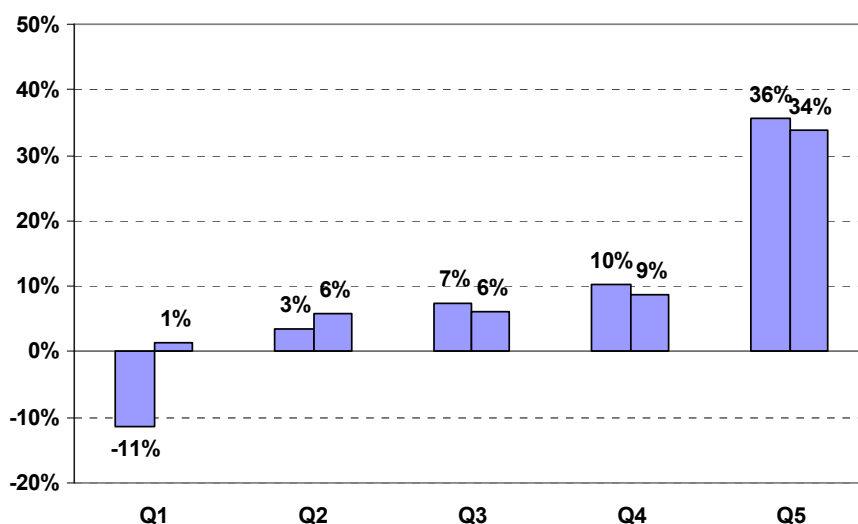
Source: INSEE.

19. Unfortunately, answers to some of the questions about the impact of the crisis on income distribution will have to wait for many years: several OECD countries still lack annual surveys on income distribution and, even for those who do, the time required for processing and editing the survey results lead to long delays before these data enter public discussions.[9]

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[9]   Among the sources that are used for the OECD income distribution questionnaire, data are available every year for most countries but every two years in Italy and Mexico, every three years in Japan and every five years in Korea and Turkey. Most surveys ask about income in the year preceding the fieldwork, with results available 1 or more years later (*e.g.* for the United States, data on income in 2007 become available in the course of 2009). Since 2005, all EU countries (as well as Norway and Iceland since 2005, and Switzerland, and Turkey since 2007) participate to the EU-SILC annual survey-programme: while this represent an improvement (although posing a challenge in terms of assessing changes over time, due to the discontinuity of previous surveys), timeliness of data remains an issue (*e.g.* EU-Silc income data for 2007 become available in December 2009).

Looking beyond income: household wealth

20. Beyond income, the crisis is focusing attention on wealth as a key determinant of people's living standards. The effects of changes in household wealth are differentiated among groups and individuals. While the collapse of the stock market has hurt the wealthy, it is also affecting retirees and workers approaching retirement, whose pensions are paid by private institutions exposed to market losses. Similarly, lower house prices are hitting middle-class families, and reducing their ability to borrow against home-equity[10].

21. Capturing these effects requires information on the ***distribution of household wealth***. While limits in this field are daunting (due to differences across countries in survey's coverage, methodologies and valuation approaches) the available data sheds some light on households' vulnerability. Beyond those counted as poor in terms of income, a much larger number of people have insufficient liquid assets (*i.e.* financial instruments that can be easily monetised, net of financial liabilities) to secure 'adequate' consumption (where 'adequate' is defined as corresponding to three months of poverty-level consumption, based on a threshold of half of median annual disposable income, left- hand side of Figure 3). Similarly, many European households have arrears on different types of debts (rents, consumer loans, mortgages and utility bills, right-hand panel of Figure 3), with significant differences across countries and debt instruments. Both types of indicators provide useful information on the concentration of vulnerabilities among households with specific characteristics.

Figure 3. Indicators of household conditions based on holdings of assets and liabilities
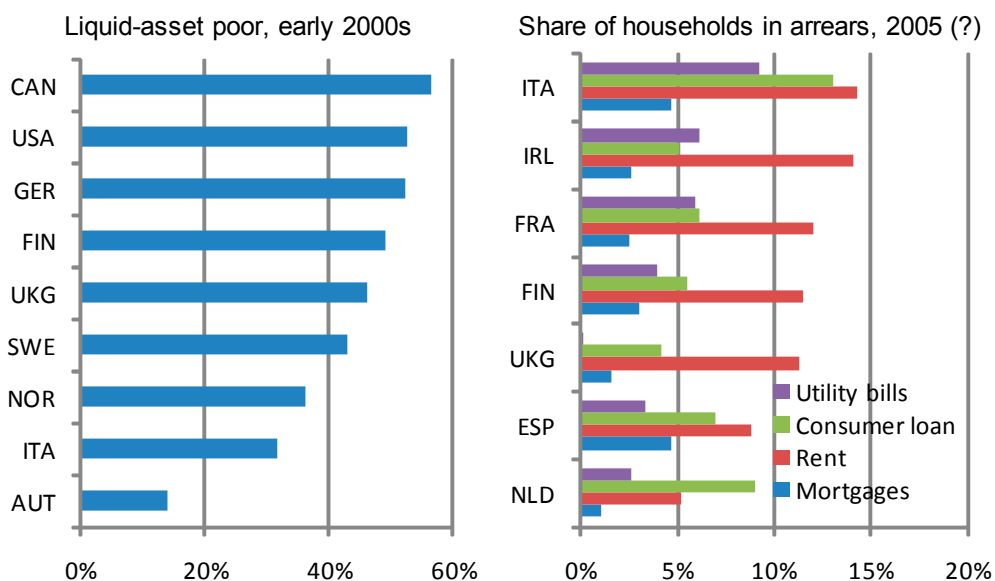
Source: Brandolini et al. (2009)

22. Much of our statistical systems, along with the communication based on them, rely on measures of central tendency (means). It is clear, however, that considering the full distribution for a range of key economic variables would have allowed identifying risks in

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10   Brandolini A., S. Magri and T. M. Smeeding (2009), "Asset-related Measures of Poverty and Economic Stress", mimeo

parts of the system, whose effects then spread to the whole economy and society.[11] More importantly, better access to micro-data would allow better managing of the consequences of the crisis as it unfolds, effects that differ across people, firms and regions. This raises the issue of how to measure heterogeneity when underlying distributions are skewed.

23. Conclusion 4: average measures of income and wealth are often insufficient to grasp developments in the standard of living. Averages need to be complemented by distributional information. This requires linking national accounts concepts with micro-economic concepts of income and wealth and merging macro- and micro-data sets.

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[11]   As already noted, if the balance sheet of the household sector may not have highlighted an obviously "unsustainable" build-up of debts, the large number of household with negative equity implied risks of large sales of residential property when the housing bubble bursts. A similar point may be made on the importance of providing data for more detailed types of financial institutions and instruments.