Working Party on Financial Statistics

HOUSEHOLDS' INVESTMENTS: FINANCING OF ECONOMY AND RISK ANALYSIS PERSPECTIVES

To be held on 29 November - 1 December 2010
OECD Conference Centre
Beginning at 2:15 p.m. on the first day

This document has been prepared by Adeline Bachellerie and Omar Birouk (Banque de France) and will be presented under item 4 of the draft agenda

The complete document is only available in PDF format
HOUSEHOLDS’ INVESTMENTS: FINANCING OF ECONOMY
AND RISK ANALYSIS PERSPECTIVES

Adeline Bachellerie
Omar Birouk

Banque de France
Directorate General Statistics
Directorate Monetary & Financial Statistics

26 November 2010

This presentation aims at analysing the French households’ savings invested in non-financial sectors directly or alternatively through financial intermediaries, from 1995 to 2010. The analysis relies on two different but consistent approaches. The first one is based on national financial accounts’ data, while the second uses the security-by-security databases on financial intermediaries’ portfolio investments.

French published financial accounts, following the ESA 95, do not provide detailed information on counterparts to financial transactions. Thus, we have to consider who-to-whom financial accounts in order to identify these counterparts. To this end, a back-calculation exercise has been compiled by the Banque de France. This specified dataset is suitable for our purpose for two reasons. First we can describe the pattern of French households’ direct portfolio allocation as a whole, considering non-financial sectors and financial intermediaries. Second, the identification of final counterpart sectors enables us to derive the non-financial sectors in which French households indirectly invest. We can thus assess not only the current French households’ behaviour with respect to savings, but also the role of financial intermediaries. To go further on the role of financial intermediaries, we have at our disposal granular data through securities’ holdings databases. The security-by-security analysis is conducted for households’ investments in life insurance companies and in money market and investment funds (UCITS).

The analysis of households’ investments in life insurance companies is based on the detailed annual security-by-security statements of portfolio investments provided by insurance companies pursuant to Article A.344-3 of the French Insurance Code, cross-referenced with the Banque de France’s securities’ and issuers’ databases. The analysis covers the years 2007 to 2009, with a focus on 2009 in an attempt to identify the possible repercussions of the yield curve translation.

Detailed statements of investments and securities’ databases were also used in order to obtain a breakdown of life insurance companies’ investments by type of financial instrument, geographical area and counterpart sector and according to the maturity and yield characteristics of the securities. Furthermore, the look-through approach applied to the UCITS securities held by insurers helped identify the final beneficiaries of the financing provided.

---

1 The look-through approach that we conduct is based on an iterative process to break down UCITS’ portfolios held by other UCITS. The residual UCITS remaining after the look-through algorithm are assumed to be mainly foreign UCITS
Gains in precision concerning the final destination of the investments allowed by the use of detailed statements, security-by-security, is nonetheless diminished by the fact that the nature of certain assets cannot be defined within the framework of this study. Consequently, all the assets that cannot be easily identified by an ISIN code or any other feature have been grouped under the “other investments” category.

The same methodology has been used for the households’ investments in UCITS, based on the detailed statements of the assets that the latter also have to provide to the Banque de France pursuant to the requirements of French provisions implementing ECB Regulations 25/2009 and 958/2007.

Section I outlines the French households’ portfolio breakdown into, first, the assets directly held on the non financial sectors and, second, on the assets held on financial intermediaries. Then, based on the analysis of financial intermediaries’ balance sheets, the paper goes with insights into the reallocation process of the households’ savings. It allows to better understand how French households eventually invest on non-financial sectors through financial intermediaries.

In section II, we deal with the main features of households’ financial investments regarding the portfolio riskiness, the geographical diversification and the investment horizon. We also investigate the role of financial intermediaries.

I. The financing of economy perspective

1.1 Households’ direct investments and the financing of economy

Two stylised facts emerge from an empirical survey on French households’ investments in the economy. First, households unsurprisingly invest mostly in Financial Intermediaries (FIs). In light of who-to-whom data from financial accounts illustrated on figure 1, the share of FIs in the households’ total portfolio reached more than 83% in 2010.

The increase in the share of FIs comes from one main driver, i.e. the higher importance of savings intermediation by insurance corporations. In the middle of nineties, 26% of French households’ assets were invested in insurance corporations while the share makes up 42% in 2010 and seems due to life insurance contracts. On the contrary, the share of financial wealth held with Monetary and Financial Intermediaries (MFIs) has been decreasing since mid-1990.

We come back to this issue in the following sections.
Secondly and more interesting is the financial assets allocation among non-financial sectors illustrated on figure 2. French households own non financial corporations through non-quoted shares and other equity, so the high proportion invested in this sector: non-financial corporations make up more than 82% of total assets held on non financial sector.

Surprisingly, households appear to invest less and less in assets from the rest of the world: their share have fallen from 18% in 1995 to 8% in 2010. A detailed analysis in the following sections will show that households invest on the rest of the world through financial intermediaries.
1.2 Households’ indirect investments through life insurance companies and UCITS

This part of the study covers 3 years (2007 – 2009) and relies on a security -by-security look-through approach of households’ investments made through life insurance companies and UCITS.

1.2.1 Financial assets held by households through life insurance companies

From the security-by-security look-through approach, we notice that households’ financial investment structure in life insurance companies remains stable over the period under review with about one third of their total investment devoted to domestic sectors. Life insurance contracts thus appear to finance mainly foreign economies.

Regarding domestic sectors, we observe that non-financial corporations and financial institutions account in average for approximately the same proportion (about 10 %) while the financing of domestic central government represents the largest share (about 13 % in average) with a peak corresponding to the 2008 financial crisis.
1.2.2 Financial assets held by households through UCITS

The security-by-security look-through analysis of the UCITS shares held by households highlights that households primarily finance the domestic economy through their investments in UCITS.

The central government sector represents only a tiny fraction of the households' investments and the share of financial investments devoted to non financial corporations remains relatively stable around 25%.

Finally we observe an increasing diversification with a peak in 2009 for investments in geographical areas other than France.
1.3 Sectors ultimately financed by households

The Figure 5 suggests that French households hold much more assets on the rest of the world than previously described (cf. Figure 2). There has been a shift towards the rest of the world to the extent that households seem to have been more inclined to invest in foreign countries through financial intermediaries (Figure 5 below).

However, most of these assets refer to deposits held by MFIs with foreign banks. This issue could be treated considering MFIs assets as final assets.

Figure 5: Sectors ultimately financed by households (% of total portfolio)

II. Risk analysis perspective

2.1 Investments by asset riskiness

French households’ financial assets appear to be mainly invested in safe or rather low-risk assets such as deposits (including sights deposits, saving accounts and time deposits), money market fund (MMF) shares or life insurance contracts. Life insurance contracts may be breakdown into contracts in Euros and unit-linked contracts. Contracts in Euros have made up about 85% of total insurance life contracts in average for the last 15 years. Indeed, as opposed to unit-linked contracts, households cannot suffer from capital losses when they held contracts in Euros. That’s why contracts in Euros are considered as lower risk assets. On the contrary, unit-linked contracts are subtracted to the total insurance life contracts and incorporated in riskier assets.
Figure 6: **Households’ financial investments by asset riskiness** (% of total assets)

Although the proportion of lower risk assets stands around 65% of total assets in 2010 as in 1995, the analysis over the period does not show a flat pattern.

Hence, some variation (by 4 percentage point) may be attributed to the evolving economic environment: the higher economic growth is, the fewer households invest in low-risk assets. The share of lower risk assets held by households had started to decline after the advent of the euro in 1999 until the financial turmoil at the beginning of the 2000s.

Higher economic growth in the middle of the last decade may explain the falling trend of the lower risk assets proportion before the financial crisis in 2007. The substitution with non-quoted shares and other equities highlights that French households traditionally do not hold much risky assets exchangeable on financial markets.

Even more, the share of financial wealth held in risky marketable assets has decreased from 20% in 1995 to 11% nowadays while non-quoted shares and other equity have reached one quarter of households’ portfolio.
The lower risk portfolio does not either present a stable structure. MMF shares only account for 1.2% of households balance sheet in 2010 contrasting with their development at the beginning of the nineties due to fiscal incentives and high short term rates (in 1995 households still held more than 5% of their assets in MMF shares).

Most of this decline seems to be due to the increasing attractiveness of life insurance contracts regarding fiscal incentives combined with evidence of strong cohort effects. Indeed, the ageing population and the inexistence of pension funds may explain the fact that life insurance makes up more than 36% of total households financial assets in 2010 instead of 20% in 1995. Another substantial change in the portfolio allocation is the decline of the share of deposits which has been falling from 41% in 1995 down to 28% in 2010.

All in all, French households' portfolio pattern seems fairly simple: 78% are covered by life insurance, deposits, non-quoted shares and other equity. On one hand, this empirical evidence contrasts with what traditional economic models of portfolio theory would have predicted (CAPM model). Regarding securities return and riskiness over a long period, households should hold a higher primary proportion of securities. On the other hand, the theory on incomplete markets combined with the life cycle hypothesis may be used to explain households’ behaviour. Households do not have access to a wide range of assets without incurring high costs. Thus, they seemingly would prefer more simple assets such as life insurance contracts. The financial intermediaries are then doomed to choose the final assets in which households will eventually invest in. From the life cycle hypothesis, households choose to smooth their consumption stance and save money to avoid a decrease in consumption when they retire (which does not either mean that households dissave when they retire). Life insurance consists of a simple and safe asset to save money.
2.2 Geographical diversification through financial intermediaries

As regards the risk taken by the French households, the analysis required a distinction based on the currency in which they invest.

Financial accounts cannot provide information on this feature as life insurance contracts or investment fund shares cannot be classified with respect to the currency. Direct investment in foreign currency appears to make up less than 1% of households’ portfolio while the direct proportion in Euros stands at 40% of total assets. But this provides little information on whether or not they do save in foreign currency or, more interestingly, in other euro area member states, particularly through financial intermediaries.

From the security-by-security look-through approach, we infer that diversification is mainly achieved through financial intermediaries. We also observe a growing diversification towards the euro area, for both investments in life insurance contracts and in UCITS. The geographical diversification appears to be more pronounced for life insurance contracts than for investments in UCITS.

Figure 8: Geographical allocation of households’ portfolio held through financial intermediaries

Euros contracts vs. unit-linked contracts

The French life insurance contracts are divided between the so-called Euros contracts and unit-linked contracts. The former are contracts whose payments are guaranteed by the insurer. The latter are contracts for which the household bears the risk, since the value of the contract depends on market indexes. Hence, the sharing between these two types of contracts allows to better understand households’ choices in terms of asset allocation. Indeed, it is considered that unit-linked contracts reveal more the choices made by households, whereas the Euros contracts are subject to the asset management policy implemented by insurers in order to deliver the guaranteed payments.

The geographical diversification of unit-linked contracts bear resemblance to that of investments in UCITS so we can say that the geographical allocation of assets shows a bias in favor of domestic investments when the market risk is borne by households.
Households’ choices and assets allocation

The comparison of the look-through approach’s results for Euros and unit-linked contracts shows a different asset allocation. Indeed, the unit-linked contracts exhibit a more pronounced preference for equities while the Euro contracts are mainly invested in debt securities which represent nearly three-quarters of the total. The allocation structure of assets held through unit-linked contracts is close to that held through the UCITS. It is also worth noting that the lower interest rates since the end of 2008 have more impacted the unit-linked contracts, where the proportion of long term debt securities has moved from 20% to 31% in 2009, whereas this proportion has remained the same for the Euros contracts.

Figure 10: HHs’ assets allocation in life insurance contracts

<table>
<thead>
<tr>
<th>Euros contracts assets allocation</th>
<th>Unit-linked contracts assets allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakdown of household’s investments in Euros contracts for 2007</td>
<td>Breakdown of household’s investments in unit-linked contracts for 2007</td>
</tr>
<tr>
<td>Breakdown of household’s investments in Euros contracts for 2008</td>
<td>Breakdown of household’s investments in unit-linked contracts for 2008</td>
</tr>
<tr>
<td>Breakdown of household’s investments in Euros contracts for 2009</td>
<td>Breakdown of household’s investments in unit-linked contracts for 2009</td>
</tr>
</tbody>
</table>
2.3 Investments horizon and financial intermediaries’ role

Moreover, the proportion of long-term assets follows a trend that appears to be consistent with theory. When households choose long-term assets, they accept supplementary risk compared to short-term ones. Long-term assets make up around 70% of the portfolio in 2010 (figure 11.a). Higher economic growth may explain why households invest more in long-term assets. Conversely, as shown by figure 11.b, the share of long-term assets has started a decline since the last crisis, which has already reached 4 percentage points.

Figure 11.a and 11.b: **Breakdown of households’ financial assets** (in % of total assets)

Over the period under consideration, the weighted average residual maturity (excluding perpetual securities) of life insurers bond portfolios increased significantly, notably during 2009, climbing up to 8.3 years after 7.8 years in 2008 and 7.4 years in 2007. Indeed, the renewal of old bonds with new ones with greater maturities explains the increase in the weighted average residual maturity of life insurers’ bond portfolios. The changes in the term structure of interest rates explain the lengthening of life insurers’ bond portfolios, linked to the objective to maintain the level of return of the investments made on behalf of households due to the existence of remuneration commitments (guaranteed minimum rate on life technical liabilities).

Figure 12: **Changes in the actuarial yield structure**
Basing on who-to-whom approach, it seems interesting to assess the reallocation process of households’ assets from financial intermediaries.

Intermediation may be assessed as the number of times one asset is invested among financial intermediaries before being invested in the real sector. Then the inverse of total iterations obtained can be analysed as the reallocation speed as shown on figure 13.

Two analyses emerge from the illustration on figure 13. First, the reallocation speed decreased during the economic or financial turmoil as it decreased before the euro advent. This phenomenon can be explained by the uncertainty environment during those periods. As a consequence, financial intermediaries prefer to keep their assets than lending.

Secondly, an overall downward trend is observed over the period. The downward reallocation speed could be explained by the increasing importance of the role of financial intermediaries. Indeed, while the households’ portfolio has been multiplied by 150%, financial intermediaries’ balance sheets have increased by 600% over the last 15 years. However, the total number of financial entities has decreased over the same period leading to high integration. These two stylised facts appear consistent with the reallocation speed pattern. It can be analysed as financial sophistication of assets and specialisation among financial intermediaries. That’s why the turnover ratio for one asset has increased among financial intermediaries before the asset is invested in the real sector.

**Figure 13: Reallocation process trend curve**

![Reallocation process trend curve](Source: Banque de France)
Conclusion:

The primary analysis of the financing of the economy by households showed that households’ investments were mainly done through financial intermediaries and suggested that the financing of the economy by households is essentially indirect. The who-to-whom approach of financial accounts has allowed to identify the investments made by financial intermediaries on behalf of households and to highlight the sectors ultimately financed and the nature of assets held by the latter.

The security-by-security look-through approach shed light on the sector breakdown of investments made trough life insurers and UCITS and revealed the differences in the structure of these investments in the presence or not of capital risk borne by households. The analysis showed also a bias in favor of domestic investments when the market risk is borne by households.
Methodology

Methodology for the look-through approach for Undertakings for Collective Investments in Transferable Securities (UCITS):

The study covers three years from 2007 to 2009 and aims to give a look-through approach of the household investments made through UCITS. The look-through approach allows identifying the type of securities held through UCITS and their issuing sector. It relies on an iterative scheme to decompose the portfolios of UCITS that are held by other UCITS.

The securities were identified by using ISIN (International Securities Identification Number) codes. A number of securities with no ISIN code were unable to be classified according to the various breakdowns used. A category entitled “other investments” was therefore created to classify these unallocated securities. This item probably encompasses mainly assets issued by non-residents.

Methodology for the look-through approach for life insurance undertakings:

The detailed statements of insurance companies’ investments provide, for each line of securities held, the gross value and net value on the balance sheet as well as the market value at 31 December of the year under review. After harmonisation, made necessary by the absence of standardisation of these documents, the statements were cross-referenced with the Banque de France securities’ and issuers’ reference databases in order to identify the nature of the securities, their initial maturity, the institutional sector and the issuer.

The high proportion of investments that could be analysed and the relative stability of this proportion — varying between 95% and 98% over the three years in question — guarantee the reliability of the conclusions obtained.

<table>
<thead>
<tr>
<th>Coverage rate for the analysis of the detailed accounts of insurers’ investments</th>
<th>Total of companies’ investments that could be analysed</th>
<th>Total investments</th>
<th>Coverage rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life Insurer</td>
<td>1.262</td>
<td>1.171</td>
<td>1.386</td>
</tr>
</tbody>
</table>

Furthermore, UCITS securities were replaced by an equivalent proportion of securities held by these UCITS in order to obtain a portfolio comprising equities, debt securities and other investments excluding UCITS. This look-through approach was only possible, via an iterative process, to domestic UCITS.