Income and Wealth of Euro Area Households in Times of Ultra-Loose Monetary Policy – Stylised Facts from National and Financial Accounts Data

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Abstract

It is often purported that the ECB's ultra-loose monetary policy significantly affects household income and financial wealth. Considering selected euro area countries, this paper addresses two questions: First, how did households net interest income develop in recent years? Second, did portfolio structures change? Based on recently extended national accounts data, I derive stylised facts suggesting that net interest income indeed changed with monetary policy. However, patterns differ across countries. Whereas households in some countries suffered from declining incomes, in other countries they achieved incomes which, considered in real terms, were substantially higher than before. Tentative links to household balance sheets and their interest rate fixation suggest that these factors outweigh the significance of monetary policy. Regarding portfolios, however, less divergence is observed. Risk-taking did not increase in any country, despite the low yields of safe assets. General statements claiming that the ECB's monetary policy has solely negative effects for household finances therefore seem to be inadequate for the time being.

Keyword: monetary policy, household wealth, interest income, portfolio structure
JEL-Classification: E21, E43, G11

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1 Introduction

In recent years, nominal interest rates around the globe have moved to historically low levels. This is particularly true for industrialised countries such as the US and EU member states. It is often claimed that monetary policy has played a major role in this context. Indeed, besides reducing key interest rates to historically low levels, all major central banks have additionally introduced a variety of unconventional measures to push down nominal rates and flatten the yield curve. While the underlying reasons for the low interest rates are still being discussed (see, for instance, Bean et al. (2015), Draghi (2016), Rachel and Smith (2015), Sajedi and Thwaites (2016) as well as Summers (2017)), the effects on households seem to be relatively clear (for instance, Devine (2016)): low, zero or even negative interest rates are supposed to (1) discourage households from saving, (2) lower their income from financial assets and (3) provide incentives to invest in riskier assets which would otherwise not have been considered. Severe macroeconomic disturbances are expected to be the consequence of this development.

The first issue is closely related to the interest rate elasticity of private savings, which is discussed widely in the literature. However, the results are mixed. For instance, Attansio and Weber (1995), Beznoska and Ochmann (2013) and Gräf and Rakau (2013) found a positive correlation between interest rates and household saving for the US or Germany.[2] In contrast, Aron et al. (2012) and Geiger et al. (2016) generated an opposite result for Japan and Germany. And while Cohn and Kolluri (2003) found no significant relationship for the G7 countries, Hüfner and Koske (2010) reported a negative correlation for the same countries. Finally, Rodriguez Palenzuela et al. (2016) determined a positive correlation for euro area countries. It is obvious that the empirical findings vary depending on the model specification, the data set, the countries involved and the time period under review. Given that economic theory is not unequivocal in this regard either, since income, substitution and wealth effect partly work in the opposite direction, the mixed empirical results are not a matter of concern.

Compared to these interest rate cuts, the current situation is somewhat unique since nominal interest rates persist at a very low level and are not expected to rise in the short term. In a recently published article by Aizenman et al. (2016), an attempt has been made to address this additional channel of interest rate sensitivity of household savings. This novel approach involved estimating certain thresholds of interest rates and asking whether household behaviour would change if interest rates were below or above particular thresholds. Their findings suggest that very low interest rates can indeed affect household saving behaviour, although the specific effects depend on country characteristics and the economic environment. Against this background, Marek (2017) has provided recent survey evidence for Germany, suggesting that about 50% of German households had altered their saving behaviour by 2016 due to the low interest rates (that is, they saved more, less or differently). Unfortunately, the survey did not capture the intensity or quality of these changes, so it is unclear whether these changes will really appear at the macro level.

The bottom line of the aforementioned research is that, in the short- and medium-term, interest rates do not play a major role in household saving (and, hence, consumption) decisions. This does, of course, not exclude that individual households immediately and strongly react when interest rates change or persist at a particular level. From a macro perspective, however, households are unlikely to significantly change their saving behaviour even in times of ultra-loose monetary policy. With respect to the euro area, it is therefore highly uncertain whether the recent increase of private consumption can be attributed to the policy

[2] Most studies in this field are based on macro data, while approaches based on micro data are generally scarce. Regarding the latter, Attanasio and Weber (2010) provided an overview of the existing literature.

of the European Central Bank (ECB) since other factors like a decreasing uncertainty a likely to play a more important role as suggested by Deutsche Bundesbank (2016a).

Turning to the other concerns mentioned above, the evidence is much more limited. With respect to (2), that is, the effects of low interest rates on households' interest income, a handful of studies have attempted to quantify the effects by estimating the loss of interest income based on hypothetical interest rates corresponding to pre-crisis levels; examples include Dobbs et al. (2013), Dekabank (2013) and Holzhausen and Sikova (2014). According to these studies, euro area households have lost more than €100 billion since 2008. Approaches of this kind should be treated with caution though, since they do not consider the reasons for today's low rates nor the effects of the hypothetical higher rates on income, employment and the macro development in general.[3] Annuß and Rupprecht (2016) discussed a related issue, that is, the real rate of return that German households have achieved with their financial assets in times of low nominal interest rates. They found that the real rate of return in recent years is more or less in line with its long-term average. However, references to the quantitative development of household income from interest-bearing assets in particular were not included in their analysis.

Regarding (3), the impact of low interest rates on financial risk-taking, considerable research has been conducted from the financial stability perspective, focusing typically on the financial sector. BIS (2014) provided a comprehensive discussion of this aspect. Most of the research focusing on households addresses the role of microeconomic determinants in household risk-taking. For instance, Ampudia and Ehrmann (2017) showed that households are more likely to invest in risky assets if they have already done so successfully in the past, while Necker and Ziegelmeyer (2016) concluded that households which experienced (crisis-induced) wealth losses reduce their risk tolerance. Financial literacy is also important, as documented by Deuflhard et al. (2017) as well as Cooper and Zhu (2016), as are other socio-economic factors (see Badarinza et al. (2017) for a recent survey). Marek's (2017) article is one of the few that endeavours to disentangle the effects of low interest rates on household portfolio choice. He demonstrated that low interest rates have induced around 16% of German households to save differently. However, as mentioned above, he provided no information on the extent or shape of these changes. Based on survey data, Beer et al. (2016) found similar evidence for Austria, which suggested that households increased their financial risk-taking to a very limited extent only. To the best of my knowledge, studies that explicitly address this question from a macro perspective are virtually non-existent.

This paper tries to fill this gap. It addresses two major questions. First, how has the interest income of households in France, Germany, Italy, Spain and the euro area as a whole developed in times of ultra-loose monetary policy? Second, have households changed the structure of their financial portfolio in this environment? If so, in which way? In order to answer these questions, I derive stylised facts from recently published national and financial accounts data, covering the years 1999 to 2016. These facts are tentatively linked to potential determinants.

The main results are as follows. Net interest income of households has indeed changed with the monetary policy stance. The extent and shape of these changes, however, vary significantly from country to country. Households in some countries have suffered from declining incomes in recent years, whereas households in other countries have achieved net interest incomes which, considered in real terms, are substantially higher than in the past – in spite of the lower policy rates. There are several reasons for this, but household balance sheets

[3] Annuß and Rupprecht (2017) provided a more detailed critique of these approaches.

seem to play a major role. In other words, net interest income varies closely with the level and structure of interest-bearing assets as well as with debt. With regard to debt, interest rate fixation seems to be an important factor because it has a crucial effect on the transmission of policy rate cuts to interest payments of indebted households. With regard to portfolio behaviour, however, less divergence is apparent. In all countries, household risk-taking has not increased visibly in recent years, in spite of the low rate of return of safe assets. The results rather suggest that the latter has gained in importance, confirming existing research which shows that determinants such as the liquidity, transparency and safety of financial assets are much more important to households than the rate of return they generate. Finally, considering that net interest income is not generally very important for households, it seems unlikely that low policy rates will cause severe macroeconomic effects.

The remainder of this paper is organised as follows. Section 2 describes the datasets I use and briefly outlines the recent extensions made by central banks and national statistical offices. Section 3 addresses the two questions mentioned above by discussing stylised facts regarding the property income and financial wealth of households in the countries of interest. In addition, tentative links to potential determinants shed some light on the mechanics behind the developments. Section 4 concludes.

2 Data

Since the purpose of this paper is to analyse household income and financial wealth from a macroeconomic perspective, national and financial accounts are an obvious data source. These datasets provide comprehensive, consistent and internationally comparable macro data on a quarterly basis. Since both accounts follow the same rules (e.g. with respect to sector classification), namely the European system of accounts 2010 (ESA 2010), it is also possible to consistently link the two datasets to shed light on potential interdependencies. Furthermore, the accounts ensure stock-flow consistency, i.e. changes in stocks (e.g. deposits) that occurred over a particular period can be consistently traced back to relevant flows that took place over the same period (e.g. acquisition of deposits). This general characteristic is particularly beneficial with regard to the second question addressed in this article, namely the changes in household portfolio structure in times of ultra-loose monetary policy. More recently, the Europe-wide adoption of the ESA 2010 has led to further extensions of these accounts.[4] For the first time, these extensions enable light to be shed on particular developments that were previously either hidden behind the aggregates or not available at all. I take advantage of these innovations in this article.

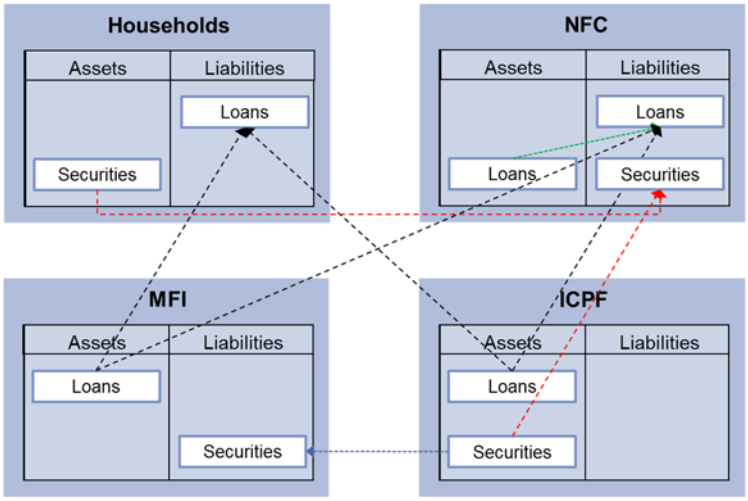
Regarding national accounts, ESA 2010 *inter alia* foresees the compilation and publication of information on the various components of property income generated by institutional sectors, including households. According to this system, property income generally consists of five components: (1) interest income, (2) distributed income of corporations (dividends etc.), (3) reinvested earnings on foreign direct investment, (4) other investment income and (5) rent.[5] In the following, I focus on (1) interest income only. There are three main reasons for this. First, the debate on how the low interest rate environment affects households typically focuses on interest income, in particular debates in the public and

[4] Deutsche Bundesbank (2014a) and Rupprecht (2017) provided a comprehensive overview of the implications of ESA 2010 for financial accounts. For instance, according to ESA 2010 principles, changes in stocks can also occur due to valuation changes or other changes in volume (reclassifications etc.).

[5] More precisely, ESA 2010 classifies property income as distributive transactions. In line with the sequence of the accounts, property income is abbreviated to D.4 and its components are subordinated accordingly (D.41-D.45).

political sphere (for instance, Rösl (2013)). Second, as will be seen below, interest-bearing assets are the most important financial assets of households across the euro area. Moreover, based on survey information, Arrondel et al. (2014) showed that, whereas almost every household in the euro area possesses at least one interest-bearing asset, holdings of shares or home ownership – exemplified sources of other components of property income – are much less common. Third, changes in monetary policy typically directly affect household interest income via the interest rate channel of monetary transmission, while other types of property income are affected less and/or indirectly (that is, with some delay). A possible fourth, more data related reason is that, according to anecdotal evidence, some data on property income other than interest income suffers from quality deficits, which *inter alia* reduce international comparability.

Figure 1: Stylised presentation of selected debtor/creditor relationships



Source: Rupprecht (2015). NFC stands for non-financial corporations, MFI is the abbreviation for monetary financial institutes and ICPF stands for insurance corporations and pension funds. The arrows point to the relevant sectors to which a given sector has a claim.

In the case of financial accounts, ESA 2010 particularly resulted in a further diversification of the financial instruments captured. There are now eight types of financial instruments: monetary gold and special drawing rights (irrelevant for households), cash and deposits, debt securities, loans, equity, claims against insurances, financial derivatives as well as other accounts receivable/payable. Most instruments are further diversified, e.g. by separating different maturities, notice periods or contract types. One of the most useful features, which only became available recently, is comprehensive data on the financial interconnectedness of institutional sectors. That is, while financial accounts data prior to ESA 2010 already contained information on the volume and structure of household financial assets and liabilities, it is now possible to extract detailed information on the particular creditor-debtor relationship. Figure 1 provides a stylised presentation of these relationships. For the first time at the macro level, therefore, it is now possible, for example, to consistently determine particular issuers of debt securities held by households or the creditors of loans. This information is particularly useful for analysing household portfolio structures; Rupprecht (2015) discussed a wider set of potential ways to use this data for monetary policy purposes.

In the euro area, Eurostat collects and distributes national accounts data of member countries, while the ECB distributes national and euro area financial accounts data. For the purpose of this paper, I therefore extracted most of my data from databases of these institutions.

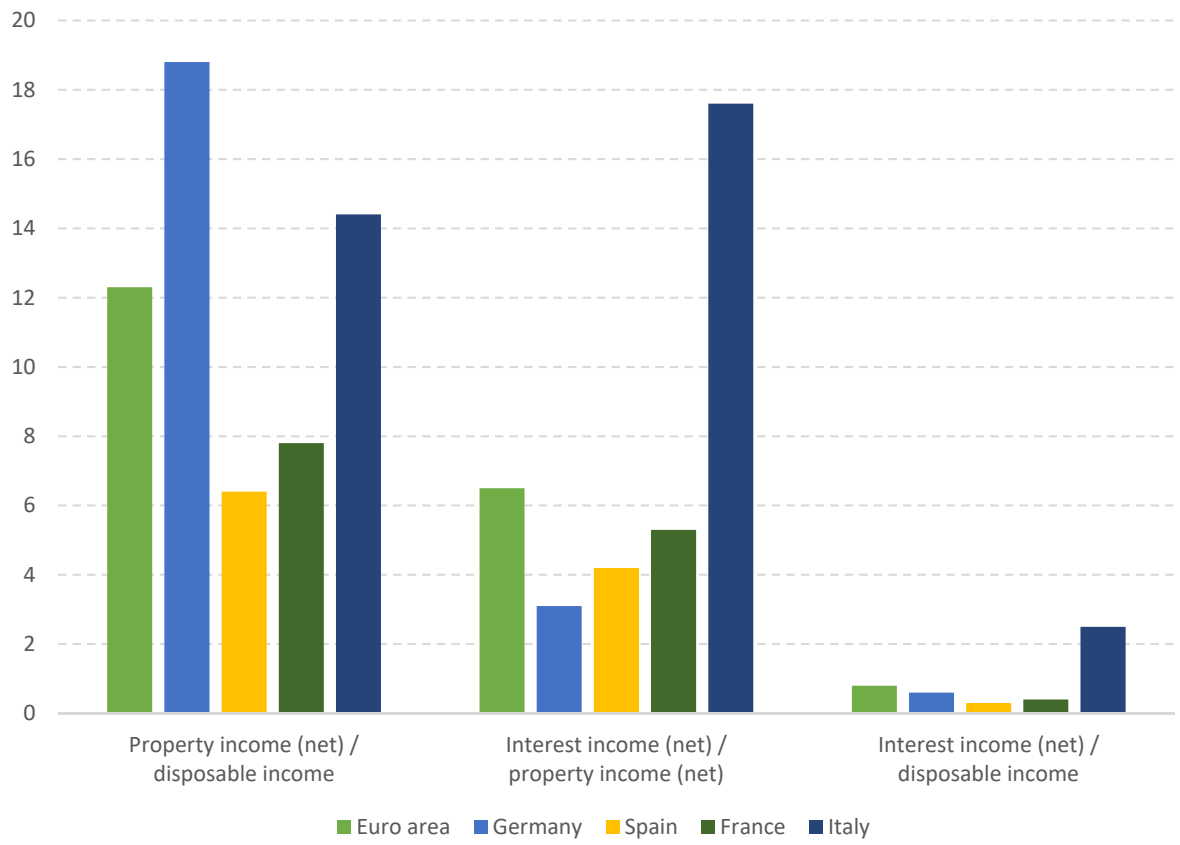
3. Household interest income and financial portfolio structure – stylised facts

3.1 Household interest income in the euro area

The first question addressed in this paper is closely connected to the aforementioned fear that the ECB's ultra-loose monetary policy will significantly reduce household income via losses of interest income, which in turn causes severe macroeconomic effects. It is therefore plausible to start with some stylised facts regarding the role of property income in general as well as the role of interest income in particular for households across the euro area.

Figure 2 provides initial insights. Note that both property income and its components are always net figures, i.e. income received minus income paid. Why is that? The aforementioned critics of the ultra-loose monetary policy often refer to one aspect only, namely income received. Although it is reasonable to discuss this (gross) figure in order to evaluate the development of interest income of savers, it neglects that households are not only savers, but also debtors who are likewise affected by interest rate changes. In order to assess the effects of the latter on households' overall interest income, it is therefore necessary to consider both sides of the coin.

Figure 2: Property income of euro area households as of 2016

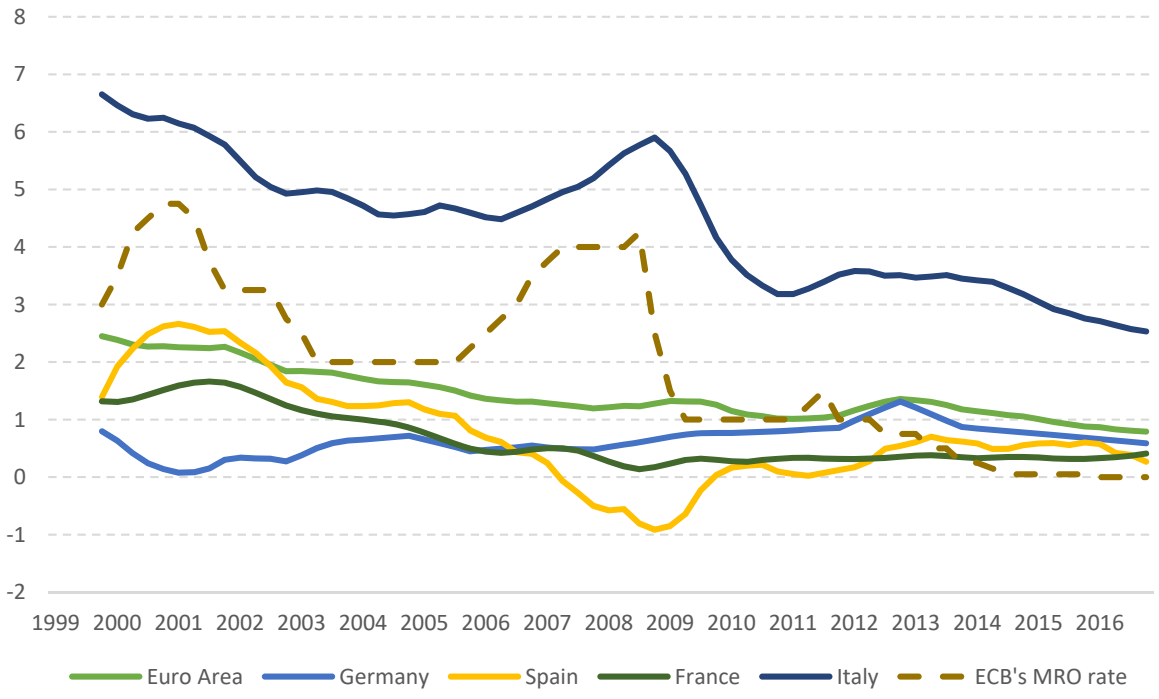


Source: Eurostat and own calculations. Proportions in %.

As can be seen from the left part of Figure 2, net property income itself accounted for a noteworthy proportion of household disposable income in 2016. For euro area households, this source accounted for around 12% of disposable income. However, its role varied significantly across countries. Whereas it made up around 19% and 15% of household disposable income in Germany and Italy, respectively, it was much less important in France (8%) and Spain (6%). One major reason for this difference is the fact that the structure of the corporation landscape differs from country to country, as described, for instance, in Carboni et al. (2013). By the structure of the corporation landscape I mean the legal form of corporations and their statistical classification in national accounts. Let us take the example of Germany, where many corporations are private limited companies ("*GmbH*") that pay income to their proprietors, who are classified as households. In other countries, this legal form is much less important. Another aspect closely related to this is the development of corporations' profits, which differed significantly across the euro area in the period under review.

Focusing on household net interest income, Figure 2 also reveals that net interest income generally contributes only a small fraction to household net property income. In 2016, the proportion ranged from 3% in Germany to 6% in the euro area; Italy with a level of 18% was a noteworthy exception. Replacing net property income with disposable income as a reference, Figure 2 finally shows that the importance of net interest income itself was almost negligible. In 2016, it contributed less than 1% to household disposable income in the euro area, and not even half of that in Spain. Even the proportion of around 2.5% in Italy was very low. And yet is this the result of ultra-loose monetary policy? In other words: Do these figures confirm the suspicion that household net interest income is severely affected by the low interest rate environment?

Figure 3: Share of interest income in household disposable income over time



Source: Eurostat and the ECB. Proportions in %. Interest income and disposable income compiled by using moving four-quarter sums. The ECB's MRO rate represents the interest rate for the ECB's main refinancing operations.

Figure 3 sheds more light on this question. The graph shows how net interest income developed as a proportion of disposable income from 1999 onwards against the background of the monetary policy stance, reflected by the ECB's interest rate for main refinancing operations.[6] The data shows that the importance of net interest income for euro area households has fallen almost continuously since the introduction of the euro. This is generally true for both periods featuring monetary tightening (such as between 2005 and 2007) and periods during which monetary policy was loosened (e.g. between 2001 and 2003). This trend has not changed much in recent years either, even though monetary policy became ultra-loose with an MRO rate approaching and eventually reaching 0% as well as the introduction of various unconventional measures such as the ECB's asset purchase programme in early 2015.

Developments at the country level are generally in line with the euro area as a whole. In Spain, France and Italy, proportions also follow a downward trend, with similar differences in the extent of the trend. One striking feature may be the fact that volatility is much higher in some countries, most notably in Spain, where the distinct downward trend turned into a slight upward trend from 2009 onwards. In contrast, the proportion in France developed much more smoothly. Germany, however, seems to deviate from these developments in two respects. In this country, household net interest income as a proportion of disposable income (1) changed little over time, notwithstanding varying monetary policy regimes. If at all, the data (2) suggests an increasing rather than a decreasing trend, at least for some periods, which contrasts with the direction of development of the monetary policy stance.

Obviously, there are other factors at play which seem to affect the proportion of household net interest income more strongly. However, even if monetary policy was the main cause, neither the 2.5% registered in 1999 nor the 1% in 2016 justifies any fear that a loss of euro area household net interest income would result in severe macroeconomic disturbances. This is not to say that certain individual households may indeed face significant income losses, whereas others may not.[7] Nor does it exclude the fact that the magnitude of these effects may increase in the long run, particularly when low rates persist and the effects spread to other forms of property income (e.g. investment income attributable to insurance policy holders, affecting household old-age provisions).[8] From today's macro perspective, however, the data suggests that these fears are exaggerated.

To gain a better understanding of the movement of net interest income itself, Figure 4 illustrates the developments in the countries under investigation. In order to avoid distortions from different inflation movements, nominal net interest income is deflated by using country-specific harmonised indices of consumer prices (HICPs). The figure shows that some of the patterns observed above remain, whereas others only remain to a limited degree. The latter is particularly true for the downward trend, which is much less obvious when net interest income is considered in isolation. Obviously, the patterns discussed above were significantly

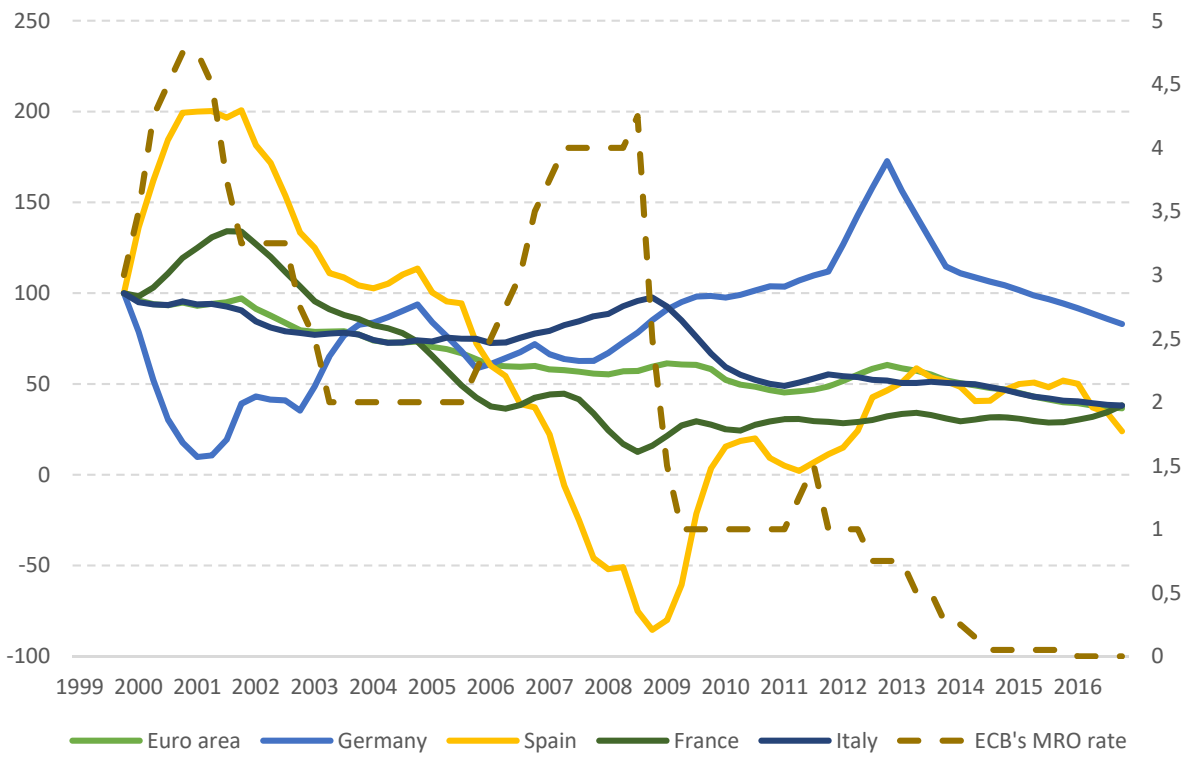
[6] Although the MRO rate is not ideal for reflecting the monetary policy stance given the variety of unconventional measures in place, its use is adequate here. After all, my purpose is not to produce an exact measurement of the monetary policy stance but to give an idea of the direction in which monetary policy changed. For a more elaborate discussion of measures of the monetary policy stance at the zero lower bound, see Deutsche Bundesbank (2017a).

[7] This aspect addresses the distributional effects of ultra-loose monetary policy, which is a closely related concern of similar importance, but which is not discussed here. A detailed discussion is given in Deutsche Bundesbank (2016b).

[8] According to the EIOPA (2017), insurance corporations in the euro area have been able so far to maintain previous levels of profitability. However, if low interest rates persist and regulation remains unchanged, it is very likely that profits will decrease in the medium term. However, the extent to which these developments will be passed on to households remains unclear.

affected by the development of total disposable income, suggesting that other components of disposable income grew more strongly in the period under review than net interest income itself. However, this does not necessarily mean that households suffer from excessive losses in interest income in times of ultra-loose monetary policy. Instead, Figure 4 shows that, in real terms, net interest income was even lower in the past, at least in some countries. In Germany, it was close to zero in the early 2000s, as was the case in France in 2008/09, whereas it even turned negative in Spain in 2007. In all of these countries, households have achieved substantially higher real net interest income in recent years, in spite of lower or even zero nominal rates. Of course, this does not exclude the hypothetic possibility that real net interest income would have been even higher in recent years if policy rates were also higher, as suggested by Holzhausen and Sikova (2014). Since higher policy rates would most likely imply higher inflation rates, however, it is doubtful whether household real net interest income would eventually rise, notwithstanding other effects of higher policy rates, for instance their impact on employment, income and the macro development as a whole. Overall, the data suggests that policy rates seem to be less important for household net interest income than is commonly assumed in the discussions and fears mentioned above. So if monetary policy is not the main cause, then what is?

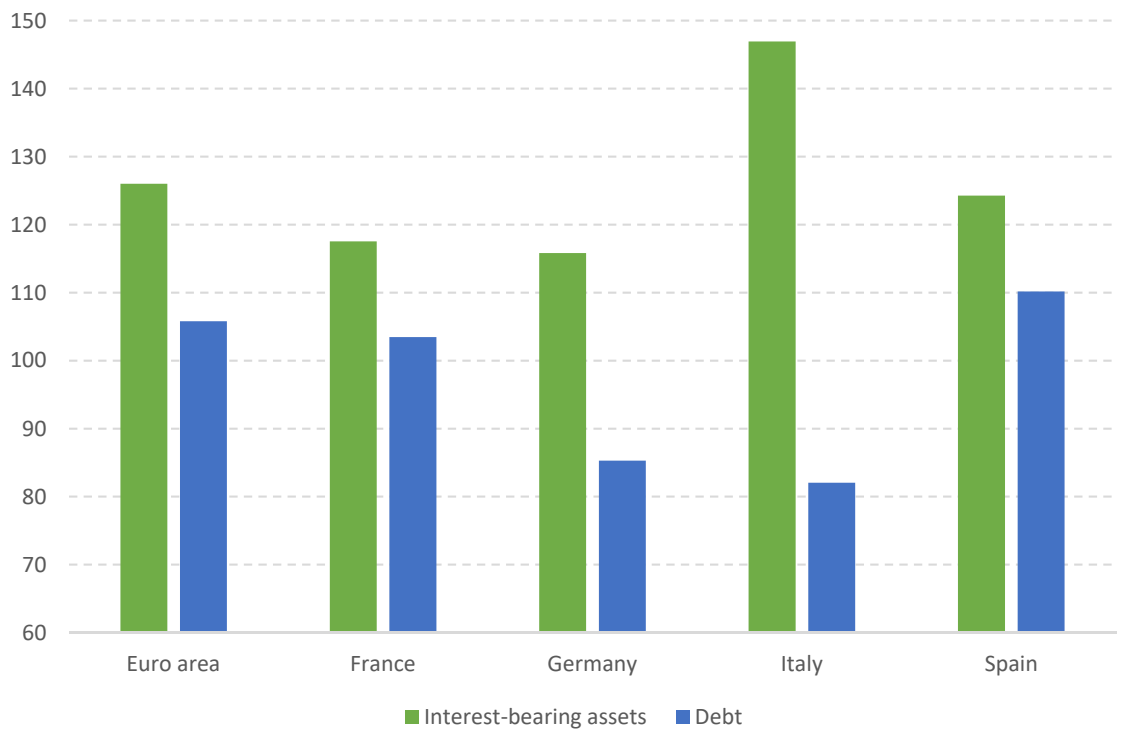
Figure 4: Household real net interest income (lhs) and the ECB MRO rate (rhs) over time



Source: Eurostat, the ECB and own compilations. Real net interest income, standardised: 1999 = 100. Net interest income compiled by using four-quarter moving sums, deflated by country-specific HICPs (base year: 2015). The ECB's MRO rate represents the ECB's interest rate for main refinancing operations.

In the following, I will briefly discuss two factors that are very likely to affect household net interest income: (1) the level and structure of household financial assets and liabilities and (2) interest rate fixation of these liabilities. Additional factors may include differences in the country-specific transmission of monetary policy (Illes and Lombardi (2013) showed that the path-through of monetary policy rates to banks' lending rates for households deviated among euro area countries in the aftermath of the Lehman collapse; Mandler et al. (2016) provided more general evidence of various effects of the single monetary policy on euro area countries during the financial crisis) and distributional aspects. The main purpose of this paper, however, is to provide stylised facts of the financial situation of households based on recently published national and financial accounts data. A profound analysis of all potential determinants and their particular role is therefore left for future research. The following discussion of two (supposedly major) factors is rather meant to provide initial ideas of possible explanations, pointing to the notion that the role of monetary policy itself is less important for household income and wealth portfolio than is generally supposed.

Figure 5: Interest-bearing assets and debt as a % of household disposable income in 2016



Source: Eurostat, the ECB and own calculations. Interest-bearing assets include deposits, debt securities, loans and other claims receivable, including financial derivatives. Debt refers to total debt.

First, Figure 5 illustrates household interest-bearing assets and debt in relation to their disposable income. Three aspects are immediately apparent. First, the levels of interest-bearing assets vary quite substantially from country to country. Whereas Italian household assets of this kind totalled around 147% of their disposable income in 2016, German households had assets worth only around 116%. France, Spain and the euro area were somewhere in between these figures. Although this is not visible in Figure 5, the structure of these assets also deviated significantly from country to country; Table 1 provides more information on household asset

structure. For instance, 30% of all French household deposits were sight deposits, whereas in Spain this figure was around twice as high. Since such deposits typically earn no interest, differences in the structure of interest-bearing assets are also likely to contribute to deviations in a country's net interest income.

Table 1: Structure of interest-bearing assets and debt of households in 2016

			In billion €		
	Euro area	**France**	**Germany**	**Italy**	**Spain**
Interest-bearing assets (total)	**8,377.9**	**1,676.5**	**2,290.6**	**1,660.6**	**869.3**
Deposits	7,084.3	1,360.5	2,094.8	1,173.1	792.4
Sight deposits	*NA*	415.5	1,223.1	709.7	512.1
Other deposits	*NA*	945.1	871.7	463.3	280.3
Debt securities	764.4	65.1	160.2	362.3	36.2
Short-term debt securities	42.5	13.8	4.2	2.3	0.4
Long-term debt securities	721.8	51.3	156.0	360.1	35.8
Loans	69.3	10.2	0.0	14.1	0.0
Short-term loans	23.6	1.9	0.0	14.1	0.0
Long-term loans	45.7	8.3	0.0	0.0	0.0
Other accounts receivable	459.9	240.7	35.6	111.2	40.7
Debt	**7,034.8**	**1,475.7**	**1,687.0**	**927.2**	**770.6**
Loans	6,292.7	1,275.3	1,671.0	697.9	717.1
Short-term loans	270.0	32.8	57.3	54.2	26.9
Long-term loans	6,022.6	1,242.5	1,613.7	643.7	690.2
Other accounts payable	670.9	191.1	15.6	192.1	53.5
Others*	71.2	0.0	0.4	37.2	0.0
Disposable income	6,649.0	1,426.2	1,977.8	1,130.2	699.5
			As a % of disposable income		
	Euro area	**France**	**Germany**	**Italy**	**Spain**
Interest-bearing assets	**126.0**	**117.5**	**115.8**	**146.9**	**124.3**
Deposits	106.5	95.4	105.9	103.8	113.3
Debt securities	11.5	4.6	8.1	32.1	5.2
Loans	1.0	0.7	0.0	1.2	0.0
Other accounts receivable	6.9	16.9	1.8	9.8	5.8
Debt	**105.8**	**103.5**	**85.3**	**82.0**	**110.2**
Loans	94.6	89.4	84.5	61.7	102.5
Other accounts payable	10.1	13.4	0.8	17.0	7.6
Others*	1.1	0.7	0.0	3.3	0.0

Source: Eurostat, the ECB and own calculations. *Others include insurance technical reserves and financial derivatives. NA stands for not available.

Second, similar discrepancies can be observed regarding debt. In this case, Spanish households came top, with a debt ratio of around 110%, whereas the debt ratio in Italy was only 82% in 2016. Third, relating closely to these two aspects, the relation of interest-bearing assets and debt at the national level deviated from country to country. In Italy, the difference was almost

65 percentage points, which was more than three times higher than in France or Spain, where it was about 14 percentage points each. Against this background, it comes as little surprise that Italian households had the largest share of net interest income as seen above: assets which led to interest income received significantly outweighed liabilities requiring interest payments. In Spain and France, however, the latter were much more important in relation to assets, which is why net interest income was lower.

The intuition that the stock of interest-bearing assets and debt on the one hand and net interest income on the other are closely connected is supported to an even greater extent when intertemporal dynamics is considered. Figure 6 illustrates these developments taking Italy and Spain as examples. It is obvious, and comes as no surprise, that household debt varies over time. However, country-specific patterns differ quite substantially. The household debt ratio in Spain almost doubled between 1999 and 2007, but Italian household debt only increased by around 50%. As an immediate consequence, interest payments also more than doubled in Spain, accounting for up to 6% of disposable income, whereas household interest payments in Italy peaked at only 2.6%. It is well known that this rapid increase in both debt and interest payments were the main causes of the financial and economic crisis in Spain, and to a lesser extent in Italy.[9] When the crisis erupted, Spanish households started to deleverage against the background of expansionary monetary policy, entailing a stark decrease in their interest payments which dropped even below the level of 1999 – in spite of higher debt. In Italy, interest payments also decreased, but household debt continued to increase at a slow pace.

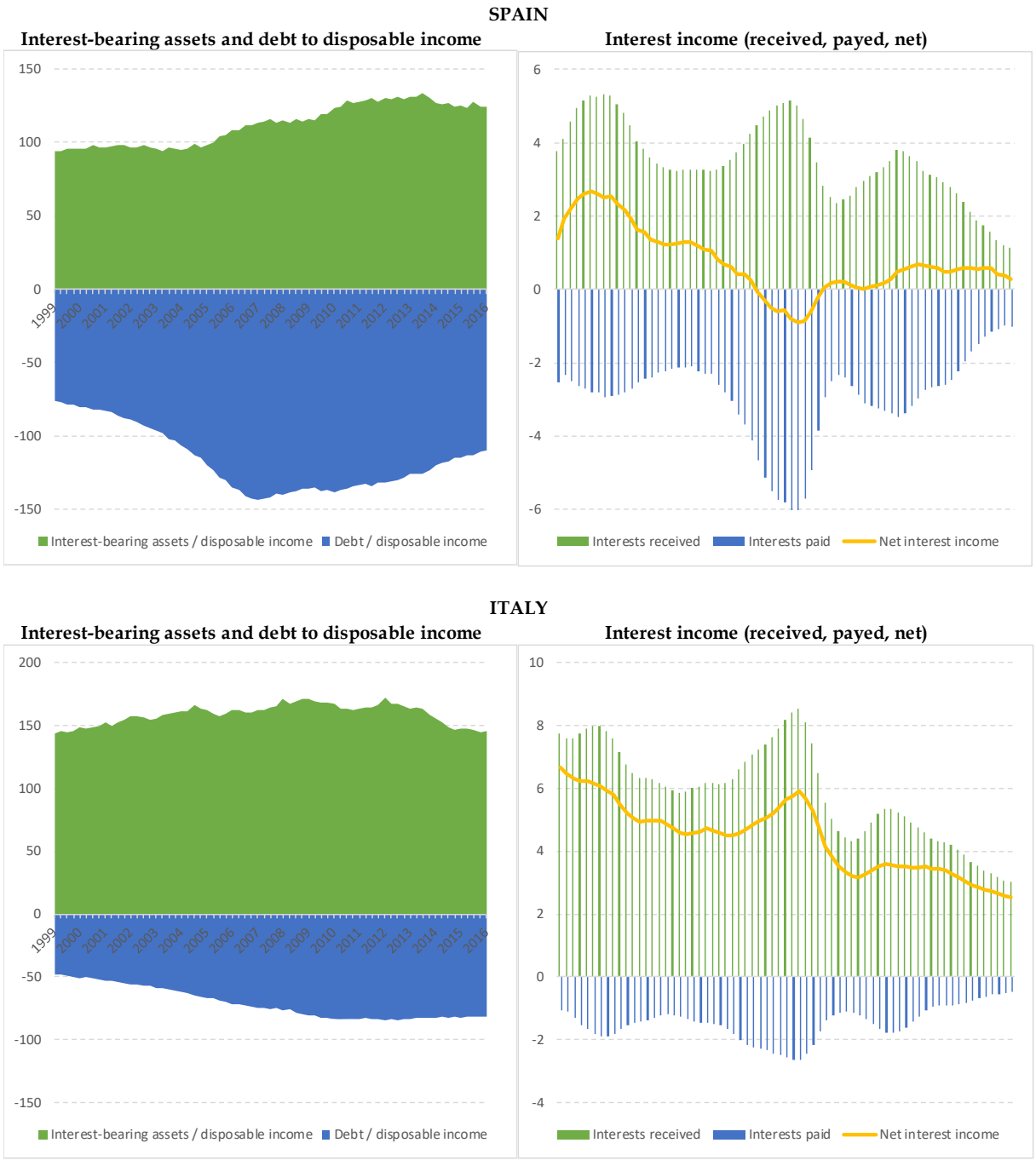
Despite being counter-intuitive in the first place, these opposing trends of interest payments and debt point to the relevance of the second factor: interest rate fixation. As can be seen from Table 2, the degree to which mortgages (the vast majority of household debt) have a variable interest rate, that is, a rate regularly adjusted to a particular reference rate during the life of the loan, differs substantially. Whereas only 15% and 16% of loans had a variable rate in Germany and France, respectively, this proportion was much higher in Italy (71%) and even more so in Spain, where about 85% of all loans were of this type (see Badarinza et al. (2017) for a discussion of possible determinants for this diversity). As a consequence, the short-term effects of interest rate changes induced by monetary policy were much larger in Spain and Italy than in France and Germany, even if the path-through of policy rate changes to lending rates was not homogenous at times (as suggested by Illes and Lombardi (2013)). Considering the typical maturity of loans, these effects are likely to persist even in the medium term. Against this background, it is not surprising that interest payments in Italy and Spain decreased significantly in times of monetary loosening – as is visible in Figure 6 – although debt declined at a much slower rate or even increased.

Turning to the asset side, Figure 6 also shows that Italian households continuously held more interest-bearing assets than their Spanish counterparts. Regarding the general structure of these assets, Table 1 further reveals that debt securities accounted for a much higher proportion of household assets in Italy than in Spain (21.8% vs. 4.2%). Accordingly, interest income received was consistently higher. Nonetheless, both countries clearly exhibited a downward trend, particularly post-2012. Monetary policy is likely to be one relevant factor for this development; changes in the structure of interest-bearing assets are another. For instance, although not visible in Table 1, sight deposits have gained in importance since 2012 at the expense of other deposits. This is true for all countries. However, it is less clear whether this is

[9] Deutsche Bundesbank (2014b) and Deutsche Bundesbank (2017b) provided a comprehensive discussion of the debt dynamics in the euro area, including its causes and consequences. McCarthy and McQuinn (2017) have complemented this discussion by disentangling the role of household characteristics for deleveraging in the euro area.

the result of lower interest rates and, hence, lower opportunity costs of sight deposits, or whether it reflects other factors such as an increased liquidity preference, e.g. due to greater uncertainty. According to Beer et al. (2016), low interest rates are likely to play only a minor role in this development; however, more detailed results for the countries under review are lacking as yet.

Figure 6: Financial stocks and interest income as a % of disposable income in Italy and Spain over time



Source: Eurostat, the ECB and own calculations. Interest-bearing assets include deposits, debt securities, loans and other claims receivable, including financial derivatives. Debt refers to total debt. Flows are compiled by using four-quarter moving sums.

Finally, although not directly part of this study, Figure 6 also suggests that monetary policy has distributional effects, in particular between creditor and debtor households. The latter generally benefit from the low interest rate environment in terms of lower interest payments (albeit to different degrees, see Table 2), whereas households with no debt only generate lower interest income received. These effects are not unique to the low interest rate environment though. In fact, the opposite is true. Monetary policy always has distributional effects, with various channels being at play (see O'Farrell (2016) for a detailed discussion). In times of higher interest rates, therefore, when debtors must pay much more, creditors benefit from increased incomes. According to Krusell and Smith (1998), there are good reasons to assume that these effects balance each other out over the business cycle. But even if this was not the case, the results of O'Farrell et al. (2016) suggest that the overall magnitude of these effects would be small.

Table 2: Selected characteristics of mortgages in euro area countries

	Variable rate loans as a proportion of total new loans (in %)	Typical reference rate for variable interest rate loans	Typical maturity (years)
Euro area	43	-	-
France	15	12-month Euribor	19
Germany	16	Long-term market rates	25-30
Italy	71	3-month Euribor	22
Spain	85	12-month Euribor	30

Source: Badarinza et al. (2017) as well as European Central Bank (2009).

To sum up, household net interest income varied not only over time but also across euro area countries. Although monetary policy rates have decreased to historically low levels since 2009, households' net interest income in real terms did not, at least not in Germany, Spain or France. This development is partly the result of distributional effects induced by monetary policy, but the overall role of monetary policy as a determinant of net interest income seems to be limited. Instead, others factors are likely to have a greater effect on net interest income, such as household balance sheets and interest rate fixation of debt contracts. Considering the fact that net interest income is only of very limited importance for household disposable income from a macro perspective, it seems unlikely that ultra-loose monetary policy will have a severe macroeconomic impact in the short term via this channel.

3.2 Household portfolio structure

Turning to the structure of households' financial assets, Table 3 starts by complementing Table 1, providing an overview of all financial assets captured in the financial accounts. In 2016, portfolio structures varied significantly from country to country. For instance, in Germany 40% of total financial assets consisted of deposits, whereas in France the proportion was much lower (28.1%). In Spain, equity was quite important (38%), whereas it accounted for only about a fifth of the household portfolio in Germany. There are many reasons for this diversity, including microeconomic (e.g. risk attitude of households, financial literacy) and macroeconomic determinants (e.g. regulations, demography, social security systems); Arrondel et al. (2014) provided a comprehensive discussion of these factors with respect to

euro area countries. Although somewhat related to this, the particular purpose of this paper is to ask whether the financial portfolio structure of households has changed against the background of the low interest rate environment.

Table 3: Structure of total financial assets of households in 2016

	In billion €				
	Euro area	**France**	**Germany**	**Italy**	**Spain**
Deposits and cash holdings	7,686.9	1,433.2	2,269.2	1,329.9	859.1
Cash	602.6	72.6	174.4	156.8	66.7
Deposits	7,084.3	1,360.5	2,094.8	1,173.1	792.4
Sight deposits	*NA*	415.5	1,223.1	709.7	512.1
Other deposits	*NA*	945.1	871.7	463.3	280.3
Debt securities	764.4	65.1	160.2	362.3	36.2
Loans	69.3	10.2	0.0	14.1	0.0
Equity and investment fund shares	6,208.9	1,345.4	1,186.7	1,397.9	780.2
Equity	4,157.1	1,056.7	604.4	917.9	516.4
Investment fund shares	2,051.8	288.7	582.2	480.0	263.8
Insurance technical reserves	7,858.4	2,007.9	2,111.4	952.0	354.6
Non-life insurance reserves	570.2	86.9	337.8	396.7	20.3
Life insurance and annuity entitlements	3,220.5	1,717.9	963.2	657.2	167.3
Other insurance technical reserves	4,067.6	203.2	810.4	255.1	167.0
Other accounts receivable	459.9	240.7	35.6	111.2	40.7
Total financial assets	**23,047.8**	**5,102.5**	**5,763.1**	**4,167.4**	**2,070.8**
	As a % of total financial assets				
	Euro area	**France**	**Germany**	**Italy**	**Spain**
Deposits and cash holdings	33.4	28.1	39.4	31.9	41.5
Cash	2.6	1.4	3.0	3.8	3.2
Deposits	30.7	26.7	36.3	28.1	38.3
Sight deposits	*NA*	8.1	21.2	17.0	24.7
Other deposits	*NA*	18.5	15.1	11.1	13.5
Debt securities	3.3	1.3	2.8	8.7	1.7
Loans	0.3	0.2	0.0	0.3	0.0
Equity and investment fund shares	26.9	26.4	20.6	33.5	37.7
Equity	18.0	20.7	10.5	22.0	24.9
Investment fund shares	8.9	5.7	10.1	11.5	12.7
Insurance technical reserves	34.1	39.4	36.6	22.8	17.1
Non-life insurance reserves	2.5	1.7	5.9	9.5	1.0
Life insurance and annuity entitlements	14.0	33.7	16.7	15.8	8.1
Other insurance technical reserves	17.6	4.0	14.1	6.1	8.1
Other accounts receivable	2.0	4.7	0.6	2.7	2.0
Total financial assets	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: The ECB and own calculations.

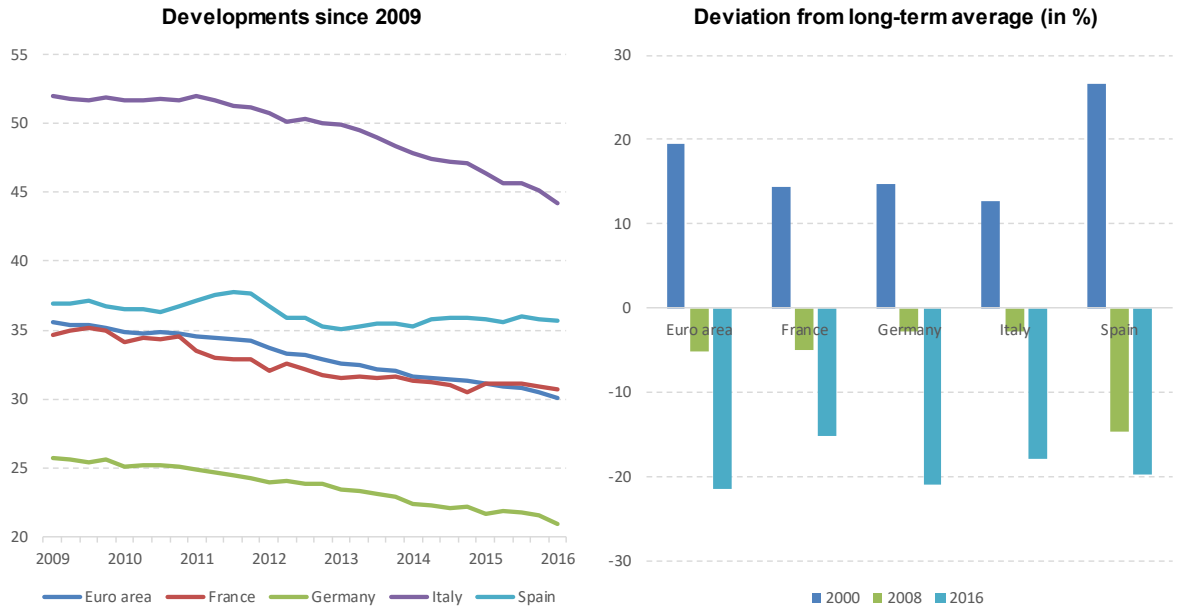
Addressing this issue, it would be misleading to simply compare the evolvement of portfolio structures over time. This is mainly because, alongside financial investments, portfolio structures are significantly influenced by valuation changes of particular instruments, particularly securities. In other words, if the market value of these instruments increases for

whatever reason, their portfolio shares will increase as well, everything else being equal.[10] It is therefore necessary to take a different approach.

One obvious possibility is to take advantage of the consistent compilation of stocks and transactions in the financial accounts mentioned in Section 2. In order to illustrate the role of financial investments for the development of the financial portfolio structure, I use the stock of financial assets as of 2009 (the year in which policy rates started to decline significantly) and update it with the transactions made up to 2016. The results show how the financial portfolio would have changed from 2009 in absence of any valuation effects. Based on this data, it is therefore possible to derive tentative conclusions regarding households' intentions to change their portfolio structure, e.g. in favour of riskier assets.

Figure 7 illustrates the results of this exercise. Are there any signs of increased risk-taking by households? If risky assets are defined as the sum of debt securities, equity and loans, the answer is: no. As can be seen from the left part of the figure, risky assets declined in importance - everywhere. The fact that the country-specific importance of risky assets differed greatly – from 52% in Italy to 26% in Germany – in 2009 makes no difference. However, the decline varies in extent. Despite already being at a relative low level in 2009, it was most pronounced in Germany, where the proportion decreased by almost 20% (2009: 25.7%, 2016: 20.9%). In France, Italy and the euro area as a whole, the decline was weaker but still significant. Spanish households, in contrast, have not changed their risk-taking much since 2009. If anything, they reduced the proportion of risky assets in 2011/12, when Spain suffered from a deep economic slump in an environment of high uncertainty. Since then, however, the share of risky assets has oscillated around 35%, whilst continuing to decline everywhere else.

Figure 7: Share of risky assets in the financial portfolio of households

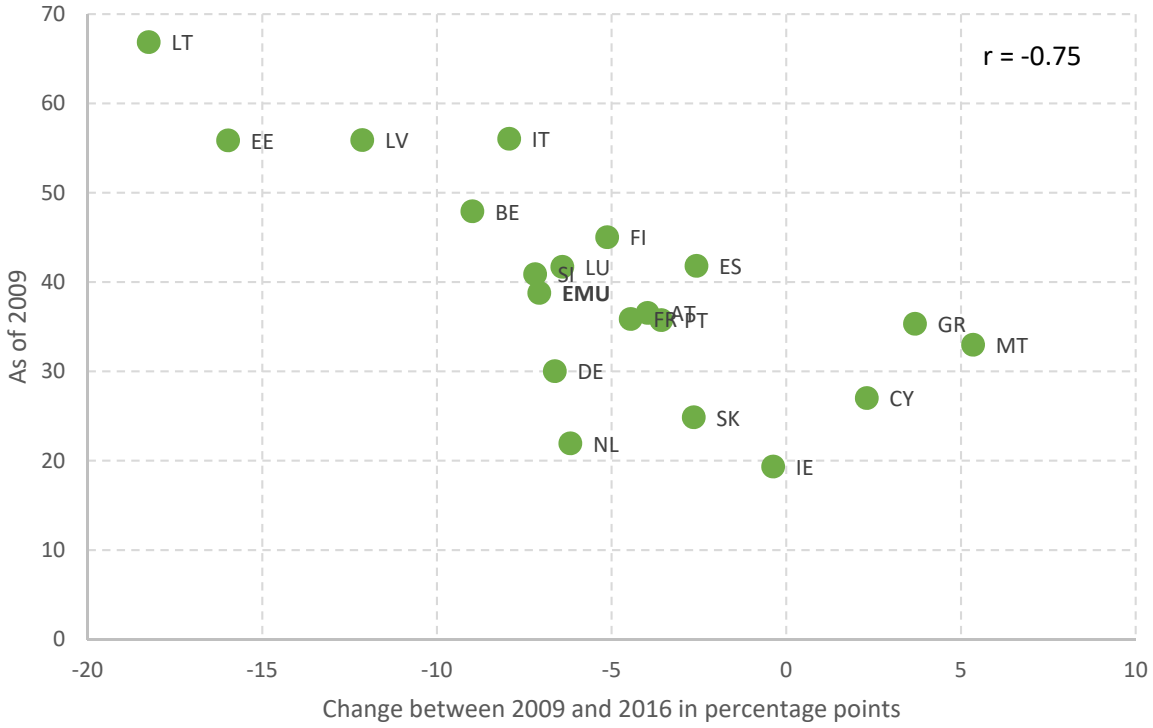


Source: The ECB, Banca d'Italia and own calculations. Proportions were compiled by adding financial transactions after 2009 (left part) and 2000 (right part) to the stock of the relevant financial asset as of 2009/2000 ("notional stocks"). Risky assets are defined as the sum of debt securities, loans, equity and investment fund shares. The long-term average comprises the years 1999-2016.

[10] Rupprecht (2017) has provided a more comprehensive discussion of the compilation and effects of such valuation changes with respect to German financial accounts.

Although not visible in the figure, this reduction occurred in almost every country of the euro area. Its extent, however, seems to be closely related to the importance of risky assets in 2009. As can be seen from figure 8, countries in which households exhibited a relatively high proportion of risky assets at the eve of the financial crisis (such as in Lithuania, Estonia or Belgium) also tend to have seen the most pronounced reduction. In contrast, countries where risky assets were of minor importance in mid-2008 (such as Ireland or Slovakia) saw little changes only. Cyprus, Greece and Malta stand out since here risky assets gained importance, however, from comparatively low levels and to a minor extent only.

Figure 8: Risky assets in household portfolios in euro area countries
As a % of total financial assets



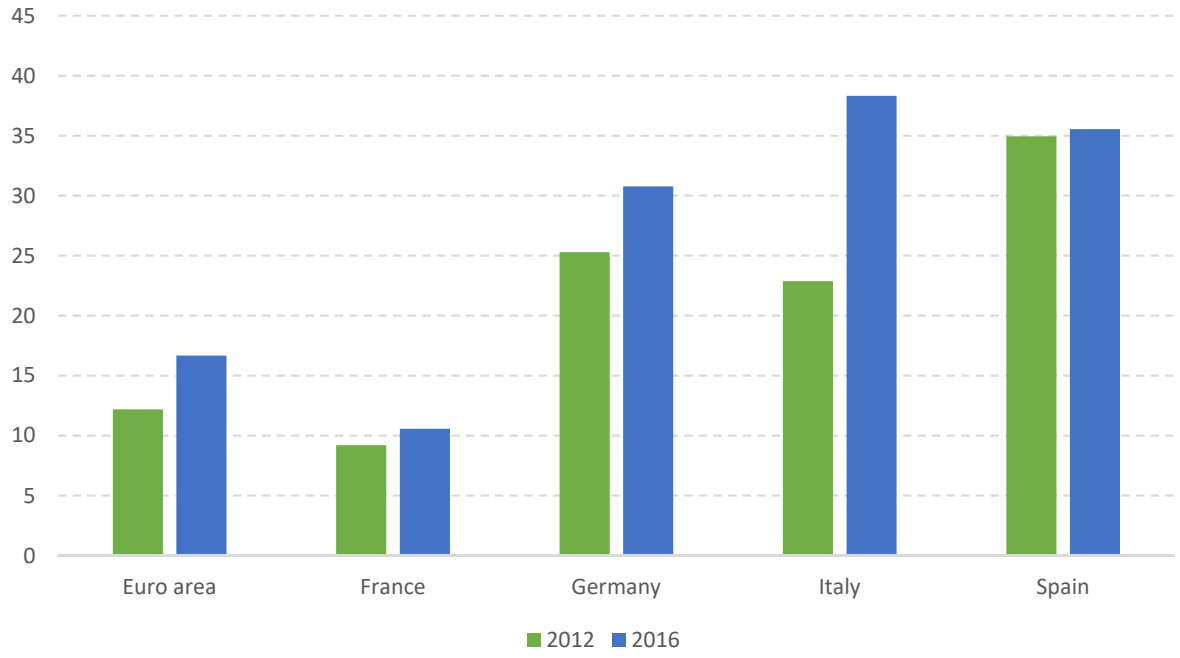
Source: Quarterly sector accounts as published by the ECB; own calculations.

It goes without saying that these results do not mean that households refrained completely from investing in risky assets. In fact, households did so in all countries under review. However, the magnitude of these investments was comparatively low, entailing a loss of importance in the portfolio structure in favour of safe assets (deposits, cash and insurance technical reserves). Furthermore, the results do not exclude the possibility that individual households even increased their investments in riskier assets, as indicated by Marek (2017). According to Annuß and Rupprecht (2017), this may be particularly true for households with good financial literacy skills. At the macro level, however, no portfolio restructuring of this kind can be observed.

Figure 7 also reveals that households in all large euro area countries tended to abstain from investing in risky assets even before interest rates fell to historically low levels. Whereas the proportion of risky assets was above its long-term average in the early years of the monetary union, it was substantially lower by the eve of the financial crisis in Europe. Since

then, it has decreased even further, albeit at a different pace. These developments suggest that interest rates or, more broadly, the rate of return of financial assets are not the dominant factor when households decide on their portfolio structure. Instead, other determinants seem to play a more important role, such as the liquidity preference of households, opportunity costs of particular asset holdings and the uncertainty surrounding future developments, as well as more structural factors including demography and regulation. Their particular importance must be explored in future research, but it is fairly obvious that the low interest rate environment itself has not induced households to significantly invest in riskier assets. In fact, the opposite occurred, proving the widely held view that ultra-loose monetary policy has significant negative side-effects in this regard to be wrong. These results are very much in line with Annuß and Rupprecht (2016), who support the notion that, for German households, the rate of return generally plays a minor role in portfolio choices, even in times of high interest rates.

Figure 9: Foreign issuers as a proportion of total share holdings of households



Source: The ECB, Banca d'Italia and own calculations. Although detailed debtor-creditor information is available for listed shares only, in line with Deutsche Bundesbank (2015) it is assumed that the same structure holds for unlisted shares as well.

This notion is further supported when the debtor structure of risky assets is investigated more closely. Figure 9 shows the shares issued by foreign corporations as a proportion of households' direct total share holdings for the years 2013 and 2016, following the same approach used above; unfortunately, earlier data is not available. Two aspects are worth mentioning. First, households clearly prefer to invest in domestic corporations, confirming the well-known "home bias" phenomenon first described by French and Poterba (1991). Typical reasons include lower transaction costs and information deficits regarding foreign firms (see Cooper et al. (2013) for a survey). The latter indicates that investments in foreign corporations are commonly perceived to be riskier, which is why risk-averse investors prefer the home market. Second, the degree of this home bias increased only slightly between 2013 and 2016,

with Italy being an exception. Considering Ampudia and Ehrmann (2017) and Bekaert et al. (2017), it is likely that especially households which already held shares in 2013 restructured their portfolio in favour of foreign issuers, whereas others stayed away from equity. However, regardless of the particular determinants of the increased importance of foreign issuers, the low magnitude of this change does not suggest either that the risk content of household financial portfolios has increased substantially in an environment of low interest rates.

4 Conclusion

Critics of the ECB's ultra-loose monetary policy regularly claim that zero interest rates severely affect households' financial situation, preparing the ground for serious macroeconomic distortions. Against this background, this paper discussed two questions. First, how has the interest income of households in France, Germany, Italy, Spain and the euro area as a whole developed in times of ultra-loose monetary policy? Second, have households changed the structure of their financial portfolio in this environment? If so, in which way?

Based on recently published national and financial accounts data, I find that household net interest income is not as low as critics suppose. In fact, it was much lower in the past in Germany, France and Spain when considered in real terms – in spite of higher policy rates. Although it did indeed recently reach historically low levels in Italy and the euro area as a whole, it started to decline in 1999 and continuously followed a downward trend since then – notwithstanding varying monetary policy regimes. Therefore, while monetary policy in general clearly affects net interest income, also via distributional effects, its overall role seems to be limited. Instead, tentative links to household balance sheets as well as interest rate fixation of debt contracts suggest that these factors are likely to be much more important. Since net interest income contributes only marginally to households' total disposable income, worries regarding severe short-term macroeconomic effects as a consequence of this policy appear to be exaggerated.

Regarding the portfolio structure, I find much less divergence. Risk-taking by households in all countries has not increased visibly in recent years, in spite of the low rate of return of safe assets. In fact, the opposite was the case: the proportion of risky assets in households' financial portfolios declined almost everywhere. Determining the relevant factors for this behaviour remains a question to be resolved in future research, but the results are in line with existing research suggesting that the rate of return is of less importance for household portfolio behaviour. From this perspective, the widely held view that ultra-loose monetary policy has significant negative side-effects therefore seems to be inadequate, at least for the time being.

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