Finance for the economy and finance for finance. An empirical assessment of European sectors and countries.

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Abstract

This work analyses the composition of the yearly changes that occurred in sectorial balance sheets in 14 founder countries of the European Union from 1995 to 2015. It proposes a methodology to separate transaction flows that play a role in real income production from flows that do not. It also identifies transactions flows that are channelled to the real domestic sector and flows that only circulate within the financial and foreign sector. Finally, it analyses the impact of market revaluation of existing and newly created financial assets on sectorial balance sheets. The empirical findings suggest that a superfluous amount of finance is not only unrelated to real economic transactions and the generation of value added, but circulates exclusively within the continental financial sector, boosting its balance sheet items with respect to the real sector. The relative size of the financial sector has not reverted during the recent years of great recession, despite the dramatic drop in gross financial transactions. Financial asset revaluations, which are of the same order of magnitude as private sector transaction flows, do not only contribute to precarious balance sheets accounting, but also heavily affect the sectorial net financial position.

Keywords: excess finance, transaction flows, revaluation, borrowing, lending, real production.

1. Introduction

The role of finance in the global economy has changed over the last decades, at the same time as free and growing capital movements across countries, increasingly globalised markets and declining regulation from governments and authorities.

Mainstream macroeconomic theory has generally given a poor account of the role of the financial sector and financial transactions, based on the idea that finance can be disregarded in a description of fundamental economic phenomena. In the mainstream tradition, all flows measured in terms of money, which accumulate into stocks, have a physical counterpart, therefore it is considered

rather unnecessary, albeit possible, to complicate models with a full description of the financial system. A classic milestone in this approach was a result by Modigliani and Miller (1958), which established the irrelevance of the composition of financial capital in determining corporate investment. Although their model referred to a microeconomic setup and was subject to several assumptions, it has subsequently been assumed to be generally valid in macroeconomic analysis. Even more recently, financially aware contributions have introduced finance as a mere technical complication to determine asset prices and portfolio choices in a contingent claim setting where the fundamental macroeconomic equilibrium still does not depend on finance, but on the interaction between an intertemporally maximising representative agent, with given preferences, and a representative firm combining physical inputs with given technology (Cochrane, 2001). This is the same framework adopted by the new, fashionable generation of DSGE-based models, which proved unable to predict the 2007-08 financial collapse and to deal with its implications. Post crisis DSGE studies, rather than questioning the scientific foundation of their understanding, have adjusted their models by introducing some financial friction, a reaction that many critics from their same academic environment have recognised as pure denial (Krugman, 2011; Stiglitz, 2011, De Long 2015, Romer, 2016).

In contrast with the mainstream tradition, heterodox economic literature has developed several studies emphasizing the central role of the financial system in making real economic processes viable. In modern industrialised economies, the economic system is a monetary economy of production, where the production of goods and services cannot take place without the opportune creation and circulation of financial capital. Finance is needed in each period to both reactivate existing real activities and provide funds for new activities (Schumpeter, 1912; Keynes, 1937; Graziani, 2003; Godley and Lavoie, 2007; Keen, 2010). Methods of investigation based on explicit modelling of the financial sector, integrated with the real economy though a full system of accounting identities connecting all flows and stocks of the economy, have proved better equipped to identify the risks associated with growth and the diversification of financial assets.[1] The origin of the financial crisis was mainly foreseen by economists, such as Godley and Wray (2000), Keen (2006), and Hudson (2006), who adopted this approach, thereby focusing on sectorial imbalances, on private sector debt, and on the negative consequences of the government sector's fiscal surplus. The changing role of finance has been investigated by a strand of studies on the financialisation of the economy, which has addressed different aspects: single individuals enhancing indebtedness, risk-taking positions and participation in financial markets (Lapavistas, 2011; Martin, 2002); corporate management increasingly targeted at maximising shareholder value (Gallino, 2005; Krippner, 2005); financial

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[1] For a review of this approach in a historical perspective, see Bezemer (2010).

assets increasingly used as sources of profitability instead of real production (Epstein, 2005; Erturk et al., 2008; Pollin, 2007; Van Treeck, 2009). The financialisation of the economy has also been associated with income polarisation and inequality (Onaran et al., 2011; Palma, 2009; Stockhammer, 2015), with endogenous financial instability and global imbalances (Crotty, 2008; Keen, 2011; Kindleberger, 1986; Minsky, 1986; Nersisyan and Wray, 2010), and with the inadequacy of regulation (Lordon, 2011).

This study analyses yearly changes in financial assets and liabilities across the sectors of 14 founder countries of the European Union (EU14) from 1995 to 2015, under the basic macroeconomic rule that one person's spending is another person's income and one person's financial asset is another person's financial liability (i.e. under a stock-flow consistent accounting framework). It contributes to the analysis of European financial flows by proposing a methodology to empirically distinguish three different components: (i) transactions in financial assets that are associated with the process of real economic decisions on production, spending and saving; (ii) transactions in financial assets that are not clearly related to economic transactions; (iii) changes in the market value of existing and newly created financial assets. As the first two components cannot be distinguished from official accounting, two proxies are here proposed as analytical tools to separate them and to provide measures of deliberately created excessive, unnecessary finance.

This study further contributes to the analysis of financial flows by separating and quantifying flows that are channelled to the real sectors of the economy and flows that only circulate within the financial sector at the international level. To this end, the institutional sectors of the economies are grouped into two macro-sectors on the basis of their ability to create purchasing power. Foreign finance and domestic finance are treated as a single macroeconomic sector responsible for creating, distributing and directing the flows of the purchasing power across sectors and countries. Domestic sectors that are not able to create and distribute new purchasing power are treated as a single real domestic sector of the economy. This includes households, non financial corporations and the government, whose main function is to generate most of the added value (excluding the added value of the domestic financial sector, which is a small share of the total) by using the financial sources available.

The choice of classifying the government as a sector that does not create money can be reasonably criticised in the light of the Modern Money Theory (MMT), which correctly points out that the government is the only possible issuer of the net financial assets held by the non-government sector (Wray, 2012; Mitchell, 2016). The definition of government by the MMT, however, considers the treasury and the central bank as a single consolidated sector. While this perspective can be fully endorsed from a theoretical point of view, there are two reasons why it is not adopted in this work.

The first one is that, according to the international accounting convention, the central bank is considered as part of the sector gathering all financial corporations and, even though its balance sheets could be technically separated, it would still represent a supranational institution in 10 countries of the Eurozone, out of the EU14 group: it would be a difficult task to consider it as part of a single country's consolidated government sector. The second reason is that the MMT view that government finance is substantially unconstrained is not shared by the actual practices in the EU, driven by the mainstream theory that government spending needs to be funded by either taxes or private saving. In practice, national governments often behave as if they were constrained; moreover, apart from self-imposed rules, national governments in the Eurozone are truly money users without being money issuers.

The remainder of the paper is organised as follows: section 2 describes the accounting framework and defines proxies and variables used for the empirical analysis; sections 3 and 4 report, respectively, results of the two proxies identifying superfluous flows of finance; section 5 reports results on volumes of flows generated by transactions (separated into formal and informal assets) in comparison with valuation effects due to market price changes; section 6 concludes.

2. Accounting and definitions

The collected dataset provides information on financial flows within 14 founder countries of the European Union (EU14) on a sector-by-sector basis, over 21 years (1995-2015). In line with the stock-flow accounting tradition, it builds on a fully integrated dataset reporting economic transactions, financial transactions and revaluation of assets. This approach makes it possible to monitor how financial flows are distributed across all sectors of the economy, how this distribution changes over time, how major changes in investment and saving are related to changes in financial transactions and to changes in the value of net assets.[2]

Table 1 reports two examples, referring to the year 2006 for UK and Spain, of the accounting matrix integrating the transaction flows of sectors and the changes in values of the financial stocks from balance sheets. This includes, firstly, a section reporting conventional income and expenditure flows, aggregated in the saving and investment items, balancing in line A, *Net saving*; secondly, a section reporting flows of assets and liabilities arising from financial transactions, balancing in line

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[2] In this accounting framework, real transactions in goods involve goods produced in past periods, i.e. real assets (such as existing houses or second-hand cars). A purchase of a real asset is accounted twice, as an investment for the sector purchasing it and as a negative investment of equivalent amount for the sector selling it. In national accounting, where all sectorial balances are aggregated, transactions in real assets are netted out and cannot be observed.

B, *Net lending*; and finally, a section reporting changes in values of assets and liabilities, balancing in line C, *Valuation effects*. The sectors considered are the 5 institutional sectors defined by the ESA accounting agreement: Non-financial corporations (NFC), General government (GOV), Households and Non-profit institutions servicing households (HH), Financial corporations (FC) and Rest of the World (RoW). For the purposes of our investigation, throughout this work these institutional sectors are also grouped into two macro sectors: Real domestic sector, RD, aggregating NFC, GOV and HH, and Foreign and financial sector, FF, aggregating FC and RoW.

Consistency across flows is assured by the fact that the sum of sectorial deficits and surpluses of an economy must be equal to zero. This must be verified when the balances of both non-financial (line A) and financial (line B) transactions are considered. It can be observed that between the net saving (line A) net lending (line B) of a sector, which according to accounting rules should coincide, there is some (sometimes relevant) statistical discrepancy. This is a likely consequence of raw data being collected by different statistical offices.

The value of financial assets or liabilities can change as a result of three components: (i) transactions in financial assets that are a direct counterpart of economic transactions; (ii) transactions in financial assets that are not clearly related to economic transactions; (iii) changes in the market value of existing and newly created financial assets.

Accounting rules alone do not allow us to distinguish between the first and the second components. However, it should be clear that, while a sector's net lending is of the same amount of its surplus, gross lending and borrowing items are virtually unlimited. Asset creation and transactions, generally speaking, are not the simple effect of yearly net saving flows adding to existing stocks. Lending does not need prior saving, it needs availability of means of payments (typically, a line of bank credit). Borrowing might not be channelled to real expenditure in goods and services, but to purchasing a stock of assets (either previously produced real, or financial assets). There is neither any accounting nor real constraint to the level of gross assets and liabilities. The only possible limit to lending and borrowing is the quantity of purchasing power, which is either generated by the domestic financial system (Lavoie, 2014, Ch.4; Michell, 2016), or flowing into the domestic economy from abroad (Lavoie, 2014, ch.7). Excess lending and excess borrowing strictly depend on the way the mass of purchasing power (liquid short-term store of wealth) circulates across sectors and is converted into changes in asset holdings.

To assess how, each year, transactions in financial flows can be delinked from sectorial real transactions in produced goods and services, two proxies are here defined (and reported in Table 1).

The first proxy measures sectorial *Lending exceeding saving* and *Borrowing exceeding investment*. This measure is inspired by a tradition of heterodox economists, nowadays reinterpreted

by the theory of monetary circuit, according to which credit money is typically created to provide (initial) finance to a borrower (typically, a firm) in order to make an investment viable. During the circulatory process, the saving generated by the share of the income that is not spent on consumption is held in a portfolio of different financial assets (final finance). Overall savings of the economy, in this simple view, should drive changes in financial asset positions from transactions, and overall investment should drive changes in financial liabilities. The liabilities of a sector exceeding its investment is interpreted as a signal that this sector has increased borrowing to undertake transactions that are not related to newly produced goods and services. Given the accounting rule that net lending of a sector is equal to its surplus, lending exceeding saving is the mirror side of exceeding incurrence of liabilities. In summary, excess liabilities are channelled to increase either the stock of real assets produced in past periods or the stock of financial assets, to an overall value that is higher than the value accruable with the purchasing power saved from disposable income.

The second proxy defines *Excess financial flows* with respect to the sectorial net lending position (line B). This takes inspiration from the idea that the essential function of the financial sector is to make sure that sectors in surplus are final holders of the financial liabilities of sectors in deficit. As sectors in deficit are net borrowers by definition, this proxy measures the amount of borrowing that exceeds the sector's deficit. Similarly, as sectors in surplus are net lenders, this proxy measures the amount of lending exceeding the surplus. When the computation is lower than zero, *Excess financial flows* takes the value of zero. By definition, *Excess financial flows* is the same when calculated from the liabilities side (line d plus deficit in line B) and from the assets side (line c minus surplus in line B).

Valuation effects are the last element of the chain going from economic transactions to changes in gross and net financial assets, the latter being accounted in the sectorial balance sheets. They will be examined separately from the flows of financial assets arising from transactions. As value changes are, roughly speaking, determined by price movements in financial markets, they are not intrinsically connected with sectorial surplus and deficit positions. It can thus happen that a sector realises a negative change in the overall value of its net financial assets even though it realises a surplus from economic transactions (see NFC in UK in 2006, Table 1). Moreover, the sum of the valuation effect of all sectors is not bound to be zero, as it depends on the composition of the asset portfolios.

Throughout the analysis (section 5), financial assets are broken down into two quantities, here labelled formal and informal claims. Formal claims are fixed income (legally enforceable) commitments to other sectors. The definition of formal claims gathers all categories of assets that are officially included in the measure of debt for EU governments: total consolidated gross nominal value

at the end of the year in currency and deposits, securities other than shares excluding financial derivatives, and loans (Eurostat metadata). Informal claims are the residual, non-fixed income categories (equities, insurance, pensions, financial derivatives and other accounts), plus fixed income claims whose issuer and holder belong to the same sector.[3] By separating formal and informal claims, it is possible to observe items and commitments of different characteristics, in terms of risk exposure and liquidity. As these different claims quite often present changes of opposite sign, aggregating them with offsetting quantities could undermine the accurate perception of the flow of financial assets enhanced every year.

3. Borrowing exceeding investment and lending exceeding saving

The first proxy isolating the flows of financial transactions that are not clearly related to the economic activities of saving and investment presents different values over time and across countries. The real domestic sectors of the economy, responsible for expenditure in produced goods and services, appear to increase their borrowing in excess of their investment and their lending in excess of their saving over the two decades considered (Panel A of Table 2). In the years 2008 and 2009, when the shock to the international financial system spread across the world and to the real economy, the flow of finance in excess of economic transactions became negative only in Spain. The RD sector, considered as a single aggregate, in the EU14 countries continued to increase its gross asset and liability positions even during the following years of great recession (from 2010 to 2015). Significant changes, however, can be observed at the level of the institutional sectors within RD, in the size of the flows over different time periods (Panel C of Table 2). From 1999 to 2002, the years of the bubble in the stock market brought about by the dotcom companies, the rise in assets from transactions was led by Non-financial corporations (NFC), which increased excess liabilities by 33.5% of GDP and excess assets by 38.7% (median level) over 4 years. In the following period culminating in the credit crunch crisis (2003-2007), characterised by credit financing (mainly) housing and consumption levels, the Households sector (HH) also remarkably increased its excess financial positions: excess borrowing increased by 22.1% of GDP (median level) and excess lending by 15.2% over five years. The government sector (GOV) was the least active in generating excess asset and liability positions until the crisis of 2008-09. During the years of the great recession, by contrast, the rise in excess liabilities and assets of the RD sector as a whole can be mainly attributed to GOV, whereas NFC

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[3] Fixed income assets are all claims legally binding on a nominal value determined at the date they are issued: failure to pay the holder implies bankruptcy of the issuer disciplined by law; they include money items, debt securities and loans. Non-fixed income assets are claims on values which are determined daily in the financial markets and whose payment to the holder cannot be legally enforced.

remained nearly unchanged and HH slightly decreased. Ruling out Ponzi-schemes and policies aimed at financial accumulation, the raised balance sheet positions for EU14 governments over the pure spending on goods and services can be explained by the tentative policy to facilitate the restoration of the private sector's balance sheets to more sustainable positions in terms of both risk exposure and net worth. Governments increased liabilities to the private sectors (either domestic - FC, NFC and HH - of foreign, RoW) in excess of their spending, to drain the private sector's bad assets, especially those of the banking system, accumulated in previous years.

Saving and investment for the FC sector are negligible and their balance is nearly zero, as the main role of FC is to create and manage the allocation and circulation of financial flows and assets. Consequently, almost all FC borrowing and lending are "in excess", although this label is not economically meaningful. The RoW sector, by contrast, is a mix of real and financial transactions. The difference between saving and investment is the country's inverted sign current account, which is related to international transactions in goods and services (trade balance) and international net payments to labour and capital (net income). Lending exceeding saving and borrowing exceeding investment of the aggregated FF sector, therefore, provide hints about the size of financial assets circulating in a country which are generated either by the domestic or by the foreign financial sector. Panel B of table 2 shows that these flows of financial assets where much higher in size, compared to the RD sector before the crisis (especially between 2003 and 2007, FF sector median flows were more than five times higher than RD flows). The median value of FF flows was more than 3 times the national GDP, with Belgium, Denmark, Ireland, Spain, France, The Netherlands, Austria and UK being above the median. After the crisis, the size of FF flows fell to more proportionate levels, although still considerably higher (around twice) those of RD. The FF sector in Greece, Spain, Austria, Portugal and Sweden has even decreased its assets and liabilities (negative flows) between 2010 and 2015. Panel C of Table 2 indicates that the domestic FC sector flows were nearly twice as high as flows involving foreign financial transactions. After the crisis, the median values of pure international financial transactions fell more quickly than FC values (from 2008 to 2013), whereas the level of the domestic financial sector's lending and borrowing declined more progressively until 2015.

The different behaviour of the RD and FF sectors is illustrated in detail in Figure 1 for some selected countries (UK, France, Spain, Germany). The figure decomposes total borrowing into saving plus borrowing exceeding saving and total lending into investment plus lending exceeding investment. The continuous line reports the balance of the RD sector, which is approximately equal to the country's current account (as the FC balance is nearly zero).

The figure clearly illustrates the sharp fall in the volume of borrowing and lending in the FF sectors after the crisis in all countries, which even reached negative values in some cases (Spain, 2013 and 2014; UK, 2013; France, 2015; Germany, 2008-2009 and 2013). The RD sector decline in excess (and total) borrowing and lending is less sudden, and can be neatly observed in UK and Spain rather than in France and Germany. The figure also clearly illustrates the imbalances across EU14 economies: Germany realises a positive and increasing current account over time, associated with high saving and low investment. In the other three countries, saving declines over time, and more radically after the crisis, the RD surplus declines over time, and only in Spain does it recover a balanced position, mainly as a result of falling national investment.

Comparing the FF and RD sectors, the difference in the size of gross lending exceeding saving and borrowing exceeding investment is striking. As accounting rules imply that the net lending of RD and FF are perfectly balanced, the systematically higher gross financial flows in the FF sector should be interpreted as flows of funds that are likely to be generated and transacted within the FF sector, thus across domestic and foreign financial organisations, without flowing through the RD sector. The crisis and the following years of great recession have hit gross financial flows more dramatically in the FF sectors, where they were disproportionate compared to RD; however, they have not clearly inverted (only restrained) the process of enhancing financial balance sheet items from transactions.

4. Excess financial flows

The second proxy isolating the flows of financial transactions that are not clearly related to real economic activities, *Excess financial flows*, is based on the difference between total borrowing (lending) and net borrowing (net lending) from economic transactions, as defined in Table 1.

Two observations will be raised in relation to this second proxy: one is theoretical, the other is technical. The first observation is that *Excess financial flows (EFF)* is more flexible, in theoretical terms, than the proxy in the previous section, as it is not based on the view that "normal" or "essential" borrowing should finance the investment. It is grounded in the more neutral view that the role of the financial system is to connect sectors in surplus with sectors in deficit. This view does not imply passive, neutral intermediation of the financial sector, neither does it imply that financial flows are negligible for the purposes of describing major economic trends. Finance, on the contrary, is the monetary impulse that, by actively creating and selecting debtors, makes it possible for real production, consumption and spending to occur (Rochon, 2016). The second observation is a warning on the way numbers will be interpreted. As the data are non-consolidated, sectorial measures of EFF,

by definition, include a share of lending (and borrowing) between subjects aggregated in the same sector (for instance, a non financial firm holding obligations of another non-financial firm). This is not automatically interpretable as non-essential lending, since it cannot be excluded that single firms or persons increase intra-sectorial asset holdings (liabilities) as they simply realise a surplus (a deficit) from their economic transactions. EFF levels might thus overestimate excess finance. As this intra-sectorial component increases when sectors are aggregated, the proxy is applied to the five institutional sectors, and not to the RD and FF macro-sectors. Given this caveat, we shall consider the proxy as more effective at interpreting excess finance if we focus on dynamics over time and relative levels rather than on absolute levels.

To provide a different perspective from the last section, the size of a sector's EFF is divided by the GDP of all EU14 countries (not by a single country's GDP). Each country enters the picture with its relative size and the sum of all countries' sectorial EFF is economically meaningful: it is a proxy for non essential financial transactions globally associated with the same sector in the whole EU14 economy.

EFF for NFC in the EU14 countries follows the fluctuations leading from the global financial bubble of 1999-2000 to that of 2005-07, and collapses in 2009. The peak of EFF for the NFC sector is in 2000 (nearly 18% of EU14 GDP) and not in 2006 (nearly 11%) as for the other private sectors (HH, FC, RoW). Comparing all countries, the EFF of UK non-financial firms is considerably higher in the years 1999-2000 than in all the following years, both in relative and absolute terms, and shrinks further after 2009.

The EFF of the HH sector fluctuates between 4% and 6% of EU14 GDP before 2008 and then drastically decreases below 2%. If it is considered that the HH sector is a traditional net saver of the economy (i.e. its normal sectorial balance is a surplus), the sectorial EFF represents households lending exceeding their surplus, which is possible only by increasing borrowing. The high EFF from 1999 to 2007 can be associated to the massive amount of credit flowing to households to finance housing, consumption and acquisitions of financial assets out of their disposable income allowance. After 2008, credit to households has dropped, so did the EFF.

Single country performance can be misleading: credit to HH should be seen as an international phenomenon involving economies with a non negligible and increasing level of integration, especially in their financial systems. The German case could well illustrate this statement, as its HH sector presents relatively low values of EFF with respect to other large economies of the group, and this is consistent with the fact that Germany is a strong net saver. Mainstream economic theory, based on the single country small open economy approach, interprets this fact as a sign of a stable, virtuous saving oriented economy. More thorough analyses (Lapavitsas et al, 2012, De Grauwe, 2013; Storm

2016), by contrast, have established that the higher German surplus and net saving (thereby lower need for borrowing) is intertwined with declining current accounts and increasing net borrowing in other EU countries (especially the peripheral countries of the Eurozone, including Italy and France).

While private sectors, especially the financial sector, are internationalised, the action of the government sector is addressed at the level of national economies. As already observed in the last section, national governments try to cushion the consequence of the crisis by increasing excess borrowing, thereby EFF, to help other sectors to reduce their liabilities simultaneously. Governments of different countries realise records in their level of EFF in different years after the credit crunch: the UK in 2008/09 (a faster reaction to financial crisis and banks bailouts), Germany in 2010, Spain and France in 2012.

Domestic financial corporations (FC) in the EU14 group appear to increase the EFF each year until 2007 a great deal with respect to all real domestic sectors. The yearly value (equivalent to 30% of EU14 GDP) is nearly double that of NFC and six times higher than HH in the earlier years (1999-2002), and raises progressively to a level 7 times higher than NFC and 15 times higher than HH in 2007 (equivalent to 70% of EU14 GDP). Considering the real domestic sectors (RD) of the EU14 group roughly, their level of EEF lowers from nearly 70% of the FC level in 2000 to only 40% in 2007. This result is consistent with the findings in the previous section and suggests, again, that an increasing share of the assets created in the financial system can hardly be associated to spending and producing added value in the real sectors. After the crisis, the extent of the EFF decreases sharply, even in relative terms with respect to RD sectors: in 2015, the EEF is of the order of magnitude of 10% of EU14 GDP for FC, 1% for GOV, 2% for HH and 5% for NFC.

The RoW sector for the EU14 group is mainly a subset of all groups' FC sector. EEF isolates the share of financial transactions that are carried out across countries. Its value increases until 2007 in terms of EU14 GDP and then falls, presenting similar fluctuations to FC. EFF of RoW is more than half the value as that of FC before 2008, less than half after 2008. This confirms the high degree of internationalisation of financial markets, but also the restraint in balance of payments' financial account flows that occurred in the aftermath of the credit crunch across EU countries, especially in the Eurozone.

5. Transactions and valuation effects

Changes in sectorial balance sheets are affected by financial transactions, resulting from deliberate decisions, and from valuation effects, resulting mainly from market price changes. After having identified financial transactions that are weakly related to economic transactions in the last

two sections, in this section we compare both the sources of changes in the values of assets and liabilities and we underline their relative importance. Assets are divided into two typologies, labelled formal and informal, defined in section 2. Valuation effects due to price changes hit informal more than formal types of assets, therefore they are a source of instability in the financial position of wealth holders. Table 3 reports the median values to GDP ratios of all EU14 countries resulting from transactions (Panel A) and from revaluations (Panel B).

The HH sector increases formal liabilities more than formal assets on a yearly basis, thereby raising formal indebtedness to other sectors before 2008. This tendency is reversed after 2008, with HH reducing debt and increasing cash balances. Over the period considered, HH increases informal assets more than liabilities, the latter being virtually zero. The result from financial transactions is that HH increases net lending in informal assets and net borrowing in formal assets. This is consistent with the analysis of excess finance in the previous two sections and suggests that part of the borrowing, especially before 2008, was channelled to financial transactions in informal assets. The valuation effect of informal assets is positive for HH in normal years and negative in the years of financial crisis, i.e. in 2000-02 and in 2008 (the latter fall being huge: -18% of GDP the median, -21% the mean). The size of valuation effects of informal assets is of the same order of magnitude as flows from transactions, the combined effect leading to double the value of flows deliberately generated and boosting the asset side of HH financial balance sheets.

The NFC sector, such as HH, also increases formal liabilities more than formal assets, thereby raising net debt to other sectors before 2008, and is then reversed, reducing debt and increasing cash balances. Changes from transactions in informal assets and liabilities are of a comparable size (different from the HH sector where informal liabilities are negligible: part of the informal liabilities of NFC are assets of HH). Overall, the changes in informal assets are slightly higher than liabilities. The NFC sector, therefore, also increases net lending in informal assets and, before 2008, net borrowing in formal assets. The valuation of informal liabilities rises more than the valuation in informal assets in normal years, mirroring (with the opposite sign) the valuation effect observed for HH. The sign reverses in the years of financial crisis, in 2000-02 and in 2008 (when the median gain from the falling value of informal liabilities is around 32% of GDP). It can also be observed that the median size of valuation effects is generally higher than the median size of flows from transactions, heavily boosting both sides (the liability side slightly more) of the NFC financial balance sheets.

The GOV sector, before 2008, increases formal liabilities more than formal assets and raises net formal debt, but to a much lower extent compared to HH and NFC. A radically different trend can be observed after 2008, where GOV boosts the flows of formal liabilities, while HH and NFC reduce them. As already commented in section 4, this is clearly the result of the tentative policy

cushioning the effects of the crisis by substituting assets. Two observations on this policy can be noted. Firstly, the size of new flows in GOV formal liabilities following the crisis is still reasonably moderate, compared to NFC and HH borrowing before the crisis: GOV median value is generally not higher than 6% per year (4.5% on average from 2009 to 2015), whereas NFC and HH together increased formal liabilities of around 10.5% per year from 2000 to 2008 (they subsequently dropped to 1.4% from 2009 to 2015). Secondly, after the crisis, the increasing flows of formal liabilities of the GOV sector were largely held by the FF sector (either domestic or foreign financial institutions, including the Eurosystem as a result of quantitative easing); this is why, after 2008, despite net debt reductions in the HH and NFC sectors, the aggregate RD sector keeps increasing net indebtedness to the FF sector. Informal transactions in assets and liabilities for GOV play only a small role. The valuation of formal liabilities of GOV fluctuates over time. The size of the valuation effect is increasing after the crisis (progressively increasing the value of GOV formal liabilities in 2011, 2012 and 2014).

The FC increases formal assets more than formal liabilities over all 20 years considered, therefore raising the net formal credit position to RD and RoW. This does not imply that the FC credit position grows unbalanced, as an important part of the fixed-income assets and liabilities are domestic interbank credit and deposits, which are registered as informal asset transactions (see section 2). What is relevant to notice is that the overall size of FC transaction flows rises from above 20% of GDP per year in the second half of the 1990s to 80% in 2007, then falls back to 20% per year. It doubles from 1.3 times the size of all RD sector financial transactions (1995-98) to 2.3 times (2003-07) and then it falls after the crisis to reach 0.3 in 2014-15. The revaluation of FC informal liabilities is higher than the revaluation of informal assets, both in normal years and in the years of financial crisis (2001-02, 2008). Meanwhile, the valuation effect of formal assets increases after the crisis, as the mirror side of increasing the value of liabilities of GOV.

The RoW increases the flows of assets and liabilities (formal and informal) before 2008 and sharply falls in the following years. The size of financial flows is smaller but comparable to that of FC. Overall, the FF sector flows, summing FC and RoW, are spectacularly higher than RD flows before 2008 (from 2003 to 2007, liabilities grow six times higher, assets 3.5 times higher), and then fall after the 2008 crisis.

From table 3 and figure 2 it is possible to establish that the yearly impact of the valuation effects on the size of both sides (assets and liabilities) of the sectorial balance sheet is all but negligible. This is already worthy of notice, as it implies precarious balance sheets of institutions and individuals holding and controlling the allocation of financial assets. But valuation effects also heavily affect the net financial position of sectors. Table 4 compares the correlation of the sectorial

net financial position, measured from the sectorial balance sheet, to both net saving (resulting from transactions) and the net valuation effect (resulting from market price changes). Correlations refer to single countries as well as to median and average values. The result is unambiguous: net valuation effects are positively and more highly correlated with changes in net financial positions than net saving is. Market prices have a heavier wealth effect on sectorial financial asset positions. This suggests that sectorial net financial positions are more affected by the decisions on portfolio allocation of the existing or newly created financial instruments (especially the non-fixed income ones, which are more exposed to price volatility) than by accumulation patterns anchored to real economic activities (saving and investment). This is also illustrated in Figure 4, where sectorial net saving and valuation effects (the histogram) are presented with the change in the financial balance sheet net position (the continuous line) of the NFC and HH of four major countries in the group.

6. Conclusion

This work has analysed the composition of the yearly changes in financial balance sheets across the sectors of 14 founder countries of the European Union, based on a stock-flow consistent accounting framework. Two proxies have been used to separate financial transaction flows that play a role in generating current real income (decisions on production, spending and saving) from transaction flows involving assets only (either pure financial or financial for real). Moreover, by grouping the institutional sectors into two macro-sectors, a Real domestic (RD) sector (the user of purchasing power), and a Foreign and financial (FF) sector (the provider and user of purchasing power), it has been possible to separate and quantify flows that are channelled to the RD sector and flows that only circulate within the FF sector. Finally, changes in the market value of existing and newly created financial assets have been analysed to assess their incidence in sectorial balance sheets.

The RD sector, considered as a single aggregate, increased its gross asset and liability positions in excess of its real economic activities over the entire period. Before the credit crunch crisis in 2008, this was the result of non financial corporations (NFC) and households (HH) increasing indebtedness and simultaneously purchasing assets. After the 2008 crisis, governments increased liabilities to the private sectors in excess of their spending, to cushion the effects of the financial crisis by draining the private sector's liabilities (including those of the financial system) accumulated in previous years.

The Financial and foreign sector (FF) deliberately created purchasing power and increased financial transaction flows before the crisis to enormously high levels. These flows enhanced the gross balance sheet items of both financial corporations and the foreign sector disproportionately with

respect to real domestic sectors. As the net financial assets of the RD and FF sectors offset each other, the disproportionate growth of gross financial asset flows of the FF sector suggest that a superfluous amount of finance was created that is not only unrelated to value added creation, but is even likely to circulate exclusively within the FF sector. During the crisis and the following years of great recession, the FF sector have reduced gross financial flows more dramatically than the RD sector. While this has certainly contributed to economic recession or stagnation, it has not reversed the size of financial assets and the leverage of the financial sector across the continent.

To assess market price valuation effects, assets have been divided into two typologies: formal (legally binding commitments to other sectors) and informal (the remaining assets). Imbalances in financial stocks can be generated by sudden price changes affecting informal assets and leaving formal asset positions rather unaltered. In the EU14 group, the aggregate RD sector increases net indebtedness to the FF sector over time. This is mainly the result of the NFC and HH accruing net indebtedness before the crisis, and to governments carrying out asset substitution during the years of great recession. The observed revaluation of informal assets over the period considered is of the same order of magnitude as private sector transaction flows (equal for HH, higher for NFC, negligible for the governments). Asset revaluations do not only affect the gross values of balance sheets, but also the sectorial net financial position. In the EU14 group, the incidence of revaluations on the sectorial net financial position is generally higher than the incidence of net saving from real economic activities.

In terms of policy suggestions, this study should draw attention to sources of instability that are usually neglected by mainstream macroeconomics. While macroeconomic policy for decades, in the EU and elsewhere, has been focusing on government fiscal balance and consumer price control, little concern and little control has been devoted to stock market prices, to real asset prices and to both the volume and quality of financial assets. This study has emphasized the point that an increasing amount of credit involves transactions of assets already in place (housing, stock market) or of newly generated financial assets without contributing to the generation of real income. It has established that, while all private sectors are involved in this process, a prevalent and growing share of the gross excess finance circulates within the domestic and foreign financial sector only. Such phenomenon is far from being neutral or irrelevant, as it creates a context of scarcity in an abundance of finance where precarious financial wealth prevails over real income: existing wealth holders (or *rentiers*) are increasingly able to submit the real economic process (including elected policy makers' decisions on economic policy) to their own objectives.

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Table 1 – Sectorial accounting: Flow-of-funds, proxies and revaluation
Percent of GDP

UK. 2006	NFC	GOV	HH	RD	FC	RoW	FF	SUM
a. Saving (Δ net worth)	4.98	-1.69	-0.48	2.81	-0.75	2.33	1.58	4.38
b. Investment	2.46	1.12	0.68	4.27	0.12	0.00	0.12	4.38
A. Surplus (a-b)	**2.51**	**-2.81**	**-1.16**	**-1.46**	**-0.87**	**2.33**	**1.46**	**0.00**
c. Lending (Δ fin. assets)	10.70	0.83	10.92	22.45	92.81	42.88	135.69	158.14
Lending exceeding saving (c-a)	*5.73*	*2.52*	*11.40*	*19.64*	*93.56*	*40.55*	*134.11*	
d. Borrowing (Δ fin. liab)	9.10	3.67	11.23	24.00	93.22	40.92	134.14	158.14
Borrowing exceeding investment (d-b)	*6.64*	*2.55*	*10.55*	*19.73*	*93.11*	*40.92*	*134.02*	
B. Net lending (c-d)	**1.60**	**-2.84**	**-0.31**	**-1.55**	**-0.42**	**1.96**	**1.55**	**0.01**
Excess financial flows (c-surplus B or d+deficit B)	*9.10*	*0.83*	*10.92*		*92.81*	*40.92*		
e. Δ value of assets	9.84	1.06	17.27	28.17	100.14	44.49	144.63	172.80
f. Δ value of liab.	13.37	7.07	11.19	31.63	99.89	41.25	141.14	172.77
C. Valuation effects (e-f)	**-3.54**	**-6.01**	**6.08**	**-3.46**	**0.26**	**3.24**	**3.50**	**0.04**
D. Δ value of net assets (B+C)	**-1.93**	**-8.85**	**5.78**	**-5.01**	**-0.16**	**5.21**	**5.04**	**0.04**

SPAIN. 2006	NFC	GOV	HH	RD	FC	RoW	FF	SUM
a. Saving (Δ net worth)	1.20	4.32	1.32	6.84	1.00	8.46	9.46	16.30
b. Investment	8.72	2.13	5.35	16.20	0.14	-0.04	0.10	16.30
A. Surplus (a-b)	**-7.52**	**2.20**	**-4.03**	**-9.36**	**0.85**	**8.51**	**9.36**	**0.00**
c. Lending (Δ fin. assets)	25.58	3.08	10.58	39.24	52.04	25.91	77.94	117.18
Lending exceeding saving (c-a)	*24.38*	*-1.24*	*9.26*	*32.40*	*51.04*	*17.44*	*68.48*	
d. Borrowing (Δ fin. liab)	33.98	0.89	13.73	48.60	51.19	17.40	68.59	117.18
Borrowing exceeding investment (d-b)	*25.26*	*-1.24*	*8.38*	*32.40*	*51.04*	*17.44*	*68.48*	
B. Net lending (c-d)	**-8.40**	**2.20**	**-3.16**	**-9.36**	**0.85**	**8.51**	**9.36**	**0.01**
Excess financial flows (c-surplus B or d+deficit B)	*25.58*	*0.89*	*10.58*		*51.19*	*17.40*		
e. Δ value of assets	31.28	3.14	25.21	59.63	51.93	25.03	76.96	136.59
f. Δ value of liab.	30.82	-4.12	8.16	34.86	56.49	5.62	62.11	96.97
C. Valuation effects (e-f)	**0.46**	**7.25**	**17.05**	**24.77**	**-4.56**	**19.41**	**14.85**	**39.61**
D. Δ value of net assets (B+C)	**-7.94**	**9.45**	**13.90**	**15.41**	**-3.71**	**27.92**	**24.21**	**39.61**

Table 2. Lending exceeding saving and borrowing exceeding investment.
Financial transactions flows, ratios to GDP.

Panel A. Real Domestic (RD) sectors by country

	Lending exceeding saving						Borrowing exceeding investment					
	1995/98	1999/02	2003/07	2008/09	2010/13	2014/15	1995/98	1999/02	2003/07	2008/09	2010/13	2014/15
Belgium	0.497	0.641	0.984	0.611	0.707	0.662	0.203	0.633	0.929	0.548	0.611	0.540
Denmark	0.203	0.128	0.485	0.144	0.046	0.078	0.203	0.128	0.485	0.144	0.046	0.078
Germany	:	0.372	0.230	0.032	0.229	0.031	:	0.252	0.143	0.052	0.229	0.087
Ireland	:	:	1.064	0.618	0.289	0.378	:	:	0.961	0.600	0.236	0.332
Greece	:	:	0.878	0.428	0.557	0.417	:	:	0.677	0.385	0.608	0.475
Spain	:	0.846	1.030	-0.067	0.302	0.266	:	0.835	1.025	-0.067	0.302	0.266
France	:	0.537	0.698	0.199	0.452	0.399	:	0.540	0.697	0.200	0.450	0.396
Italy	:	0.481	0.476	0.090	0.270	0.219	:	0.429	0.484	0.105	0.278	0.215
Netherlands	0.227	0.456	0.421	0.197	0.194	0.035	0.271	0.478	0.415	0.196	0.207	0.036
Austria	:	0.321	0.395	0.081	0.095	0.055	:	0.394	0.417	0.051	0.079	0.030
Portugal	0.540	1.183	1.275	0.367	0.529	0.385	0.511	1.169	1.215	0.372	0.520	0.370
Finland	0.352	0.199	0.304	0.130	0.307	0.288	0.308	0.172	0.398	0.219	0.442	0.440
Sweden	0.218	0.227	0.271	0.030	0.012	0.030	0.336	0.534	0.312	0.153	0.105	0.152
UK	:	0.843	0.831	0.317	0.295	0.294	:	0.861	0.839	0.307	0.282	0.284
average	**0.296**	**0.532**	**0.667**	**0.227**	**0.306**	**0.253**	**0.288**	**0.545**	**0.642**	**0.233**	**0.314**	**0.264**
median	**0.271**	**0.504**	**0.620**	**0.195**	**0.301**	**0.238**	**0.256**	**0.523**	**0.597**	**0.208**	**0.329**	**0.272**

Panel B. Financial and Foreign (FF) sectors by country

	Lending exceeding saving						Borrowing exceeding investment					
	1995/98	1999/02	2003/07	2008/09	2010/13	2014/15	1995/98	1999/02	2003/07	2008/09	2010/13	2014/15
Belgium	1.477	2.307	5.624	0.161	-0.084	0.216	1.772	2.315	5.679	0.223	0.013	0.339
Denmark	1.496	2.162	3.518	0.756	1.111	0.859	:	2.162	3.518	0.756	1.111	0.859
Germany	:	1.525	2.150	-0.242	0.403	0.425	:	1.645	2.237	-0.262	0.403	0.369
Ireland	:	:	20.853	1.552	0.400	3.314	:	:	20.888	1.531	0.485	3.412
Greece	:	:	1.188	0.845	-0.366	-0.901	:	:	1.389	0.888	-0.416	-0.958
Spain	:	1.381	3.141	0.484	-0.284	-0.399	:	1.392	3.146	0.484	-0.284	-0.399
France	:	3.149	6.718	1.051	1.565	1.505	:	3.146	6.719	1.050	1.566	1.509
Italy	:	0.942	1.317	0.290	0.339	0.309	:	0.994	1.309	0.274	0.331	0.313
Netherlands	2.725	4.763	6.976	1.012	3.077	3.094	2.682	4.742	6.982	1.013	3.065	3.093
Austria	:	1.654	4.122	0.701	-0.150	-0.031	:	1.581	4.100	0.731	-0.135	-0.006
Portugal	1.657	1.742	2.230	0.871	-0.089	-0.800	:	1.756	2.289	0.866	-0.080	-0.784
Finland	0.519	1.551	1.786	0.788	1.624	1.101	:	1.578	1.692	0.699	1.488	0.949
Sweden	1.090	0.750	1.637	0.041	-0.528	-0.368	:	0.495	1.579	-0.085	-0.626	-0.495
UK	:	3.029	6.597	0.004	0.504	0.038	:	3.011	6.589	0.014	0.517	0.048
average	**1.432**	**2.149**	**4.847**	**0.594**	**0.537**	**0.597**	**1.627**	**2.138**	**4.866**	**0.584**	**0.531**	**0.589**
median	**1.457**	**1.682**	**3.332**	**0.513**	**0.557**	**0.258**	**1.596**	**1.704**	**3.368**	**0.505**	**0.557**	**0.237**

Panel C. EU14 sectors' median values

	Lending exceeding saving						Borrowing exceeding investment					
	1995/98	1999/02	2003/07	2008/09	2010/13	2014/15	1995/98	1999/02	2003/07	2008/09	2010/13	2014/15
HH	0.037	0.073	0.152	0.006	-0.015	-0.013	0.094	0.134	0.221	0.031	-0.005	-0.008
NFC	0.110	0.387	0.299	0.079	0.070	0.040	0.062	0.335	0.228	0.022	0.043	0.021
GOV	0.125	0.043	0.097	0.120	0.204	0.155	0.113	0.037	0.096	0.119	0.204	0.156
RD	**0.256**	**0.523**	**0.597**	**0.208**	**0.329**	**0.272**	**0.271**	**0.504**	**0.620**	**0.195**	**0.301**	**0.238**
FC	0.808	0.935	2.313	0.470	0.369	0.207	0.877	0.958	2.301	0.465	0.371	0.209
RoW	0.498	0.733	1.114	0.074	0.105	0.111	0.444	0.735	1.129	0.094	0.124	0.133
FF	**1.596**	**1.704**	**3.368**	**0.505**	**0.557**	**0.237**	**1.457**	**1.682**	**3.332**	**0.513**	**0.557**	**0.258**

Figure 1. Saving and investment vs. lending and borrowing.
Ratios to GDP

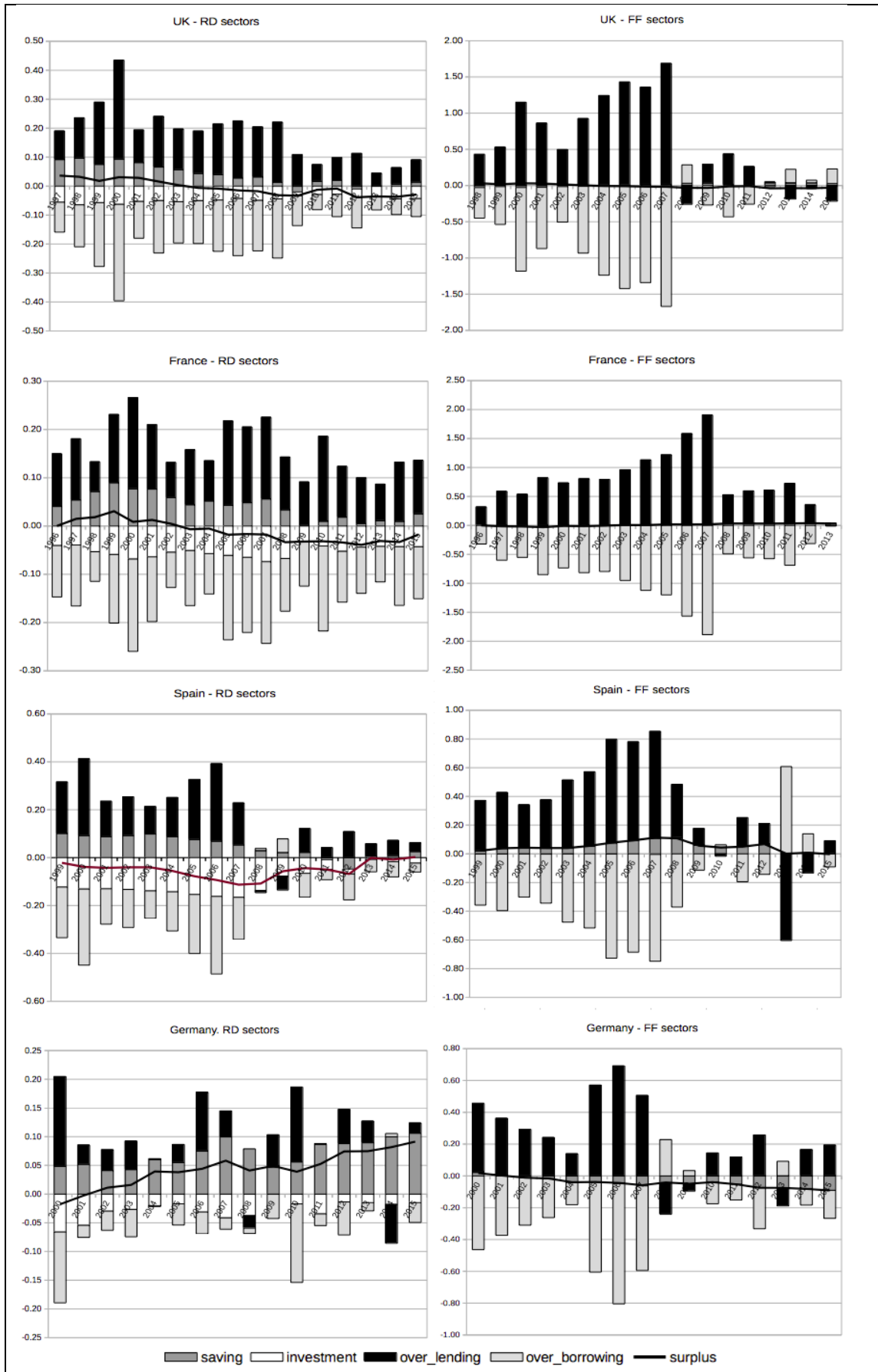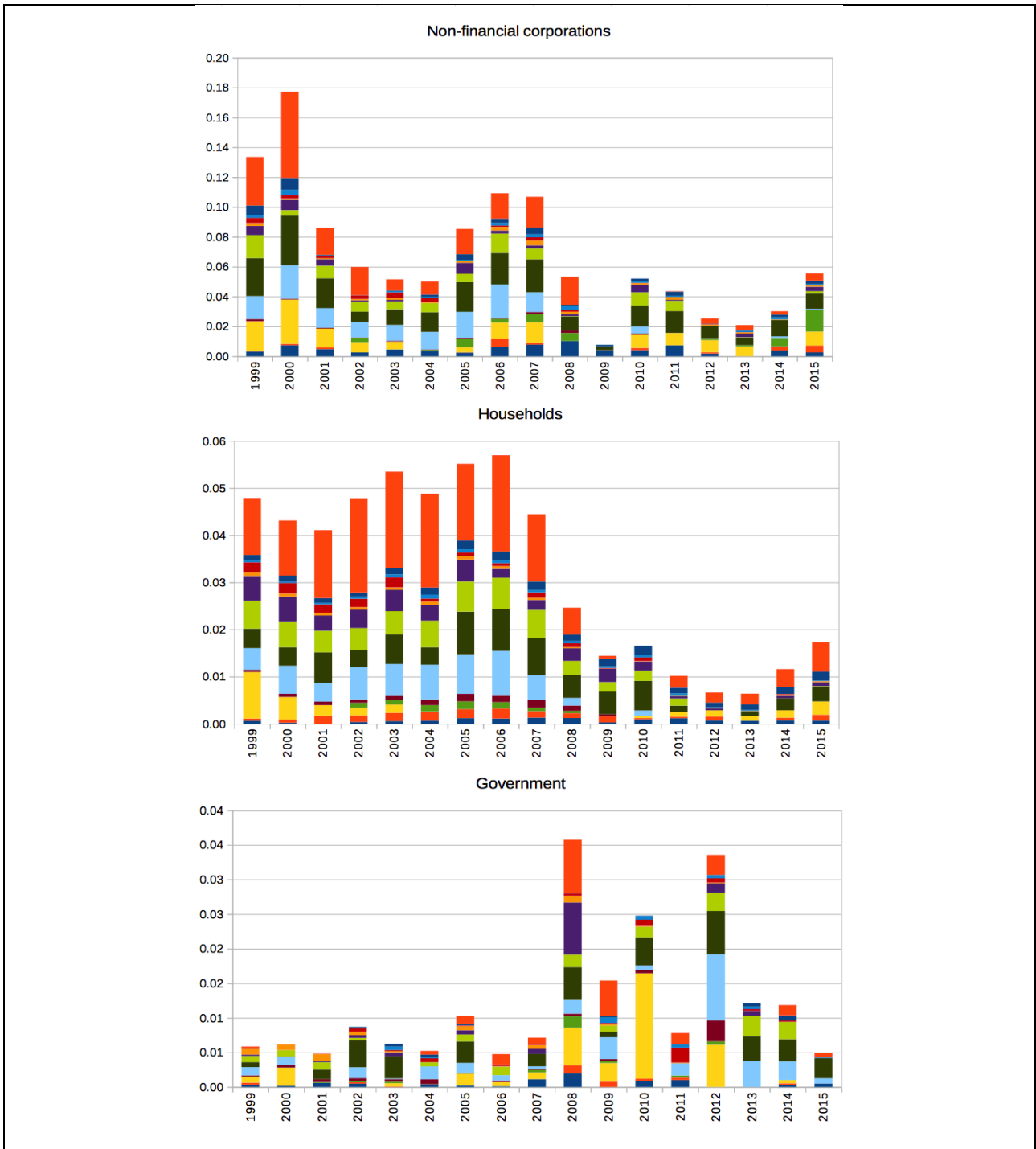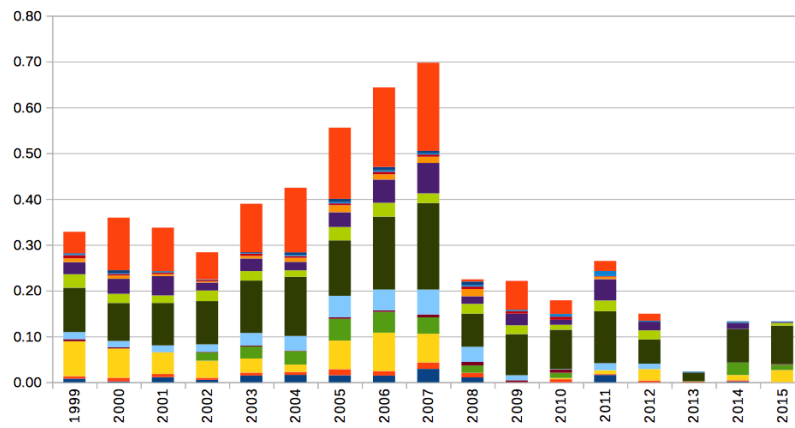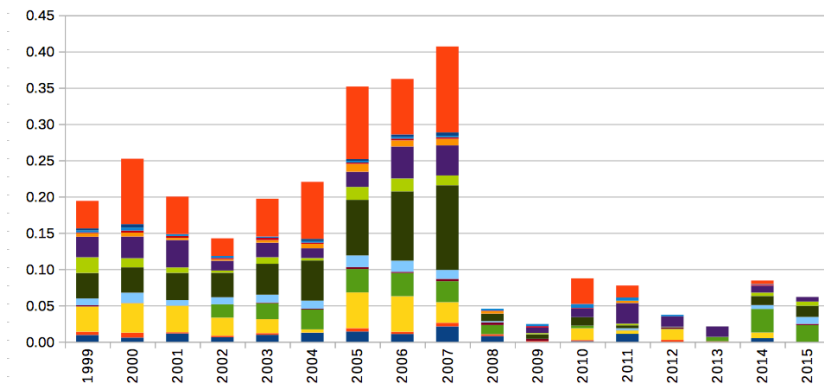saving   investment   over_lending   over_borrowing   surplus

Figure 2 – Excess financial flows by sector and country.
Ratios to EU14 countries' GDP

Financial corporations

Rest of the World

Belgium Denmark Germany Ireland Greece Spain France
Italy Netherlands Austria Portugal Finland Sweden UK

Table 3 – Changes in net assets and liabilities; formal vs. informal assets
EU14 sectors' median values. Ratios to GDP.

Panel A. Changes arising from transactions

		Assets						Liabilities					
		1995-98	1999-02	2003-07	2008-09	2010-13	2014-15	1995-98	1999-02	2003-07	2008-09	2010-13	2014-15
HH	formal	0.049	0.100	0.187	0.056	0.055	0.004	0.076	0.147	0.307	0.050	0.027	0.006
	informal	0.174	0.227	0.213	0.039	0.072	0.029	0.005	0.018	0.011	0.003	0.001	0.001
NFC	formal	0.077	0.115	0.133	0.033	0.052	0.009	0.101	0.224	0.268	0.086	0.033	-0.007
	informal	0.164	0.333	0.365	0.043	0.107	0.043	0.142	0.235	0.178	0.026	0.087	0.037
GOV	formal	-0.001	0.016	0.020	0.023	0.019	0.001	0.072	0.041	0.080	0.138	0.186	0.039
	informal	0.015	0.024	0.038	0.019	0.020	0.007	0.024	0.028	0.028	0.004	0.009	0.006
RD	formal	**0.095**	**0.311**	**0.313**	**0.128**	**0.130**	**0.015**	**0.178**	**0.239**	**0.483**	**0.186**	**0.225**	**0.031**
	informal	**0.413**	**0.440**	**0.592**	**0.119**	**0.262**	**0.097**	**0.042**	**0.050**	**0.044**	**0.017**	**0.011**	**0.017**
FC	formal	0.314	0.555	1.092	0.178	0.054	0.038	0.176	0.427	0.823	0.142	-0.014	-0.004
	informal	0.331	0.415	0.993	0.186	0.216	-0.004	0.436	0.473	1.137	0.294	0.234	0.020
RoW	formal	0.219	0.454	0.858	0.118	0.062	0.022	0.169	0.379	0.672	0.030	-0.044	0.016
	informal	0.101	0.215	0.264	0.036	0.064	0.041	0.137	0.311	0.399	0.046	0.101	0.052
FF	formal	**0.525**	**1.002**	**1.964**	**0.254**	**0.184**	**0.045**	**0.354**	**0.851**	**1.575**	**0.128**	**-0.008**	**0.045**
	informal	**0.420**	**0.556**	**1.194**	**0.297**	**0.312**	**0.015**	**0.527**	**0.751**	**1.554**	**0.341**	**0.405**	**0.052**

Panel B. Changes arising from revaluations

		Assets						Liabilities					
		1995-98	1999-02	2003-07	2008-09	2010-13	2014-15	1995-98	1999-02	2003-07	2008-09	2010-13	2014-15
HH	formal	-0.004	-0.003	-0.010	-0.001	0.005	0.004	-0.014	0.000	-0.001	0.000	0.001	0.000
	informal	0.190	0.002	0.221	-0.126	0.187	0.051	-0.002	0.000	0.000	0.000	0.000	0.000
NFC	formal	-0.010	-0.006	-0.017	0.001	-0.003	0.004	-0.005	0.020	-0.030	-0.002	0.002	0.004
	informal	0.197	-0.060	0.141	-0.060	0.049	0.006	0.429	0.023	0.420	-0.221	0.176	0.031
GOV	formal	-0.005	0.001	-0.001	0.000	0.007	0.002	0.013	-0.004	-0.021	0.013	0.031	0.055
	informal	0.030	0.014	0.043	-0.008	0.030	0.019	-0.001	0.001	0.002	0.002	0.003	0.001
RD	formal	**-0.005**	**0.007**	**-0.015**	**0.002**	**0.019**	**0.010**	**-0.001**	**-0.008**	**-0.023**	**0.015**	**0.040**	**0.056**
	informal	**0.237**	**0.038**	**0.300**	**-0.126**	**0.221**	**0.045**	**-0.004**	**0.001**	**0.008**	**0.001**	**0.001**	**0.001**
FC	formal	-0.003	0.008	-0.050	0.009	0.059	0.072	0.017	-0.008	-0.043	0.015	0.022	0.029
	informal	0.112	-0.039	0.372	-0.055	0.008	0.095	0.159	-0.048	0.418	-0.129	0.101	0.111
RoW	formal	0.031	0.056	-0.043	0.037	0.011	0.062	0.023	0.008	-0.043	0.013	0.028	0.052
	informal	0.109	-0.042	0.251	-0.102	0.099	0.059	0.053	-0.044	0.101	-0.020	0.138	0.084
FF	formal	**0.047**	**0.075**	**-0.085**	**0.045**	**0.062**	**0.115**	**0.029**	**0.009**	**-0.088**	**0.026**	**0.050**	**0.070**
	informal	**0.273**	**-0.077**	**0.666**	**-0.113**	**0.113**	**0.135**	**0.203**	**-0.091**	**0.550**	**-0.154**	**0.102**	**0.201**

Figure 3 - Formal and informal assets and liability flows, transactions and valuation effects
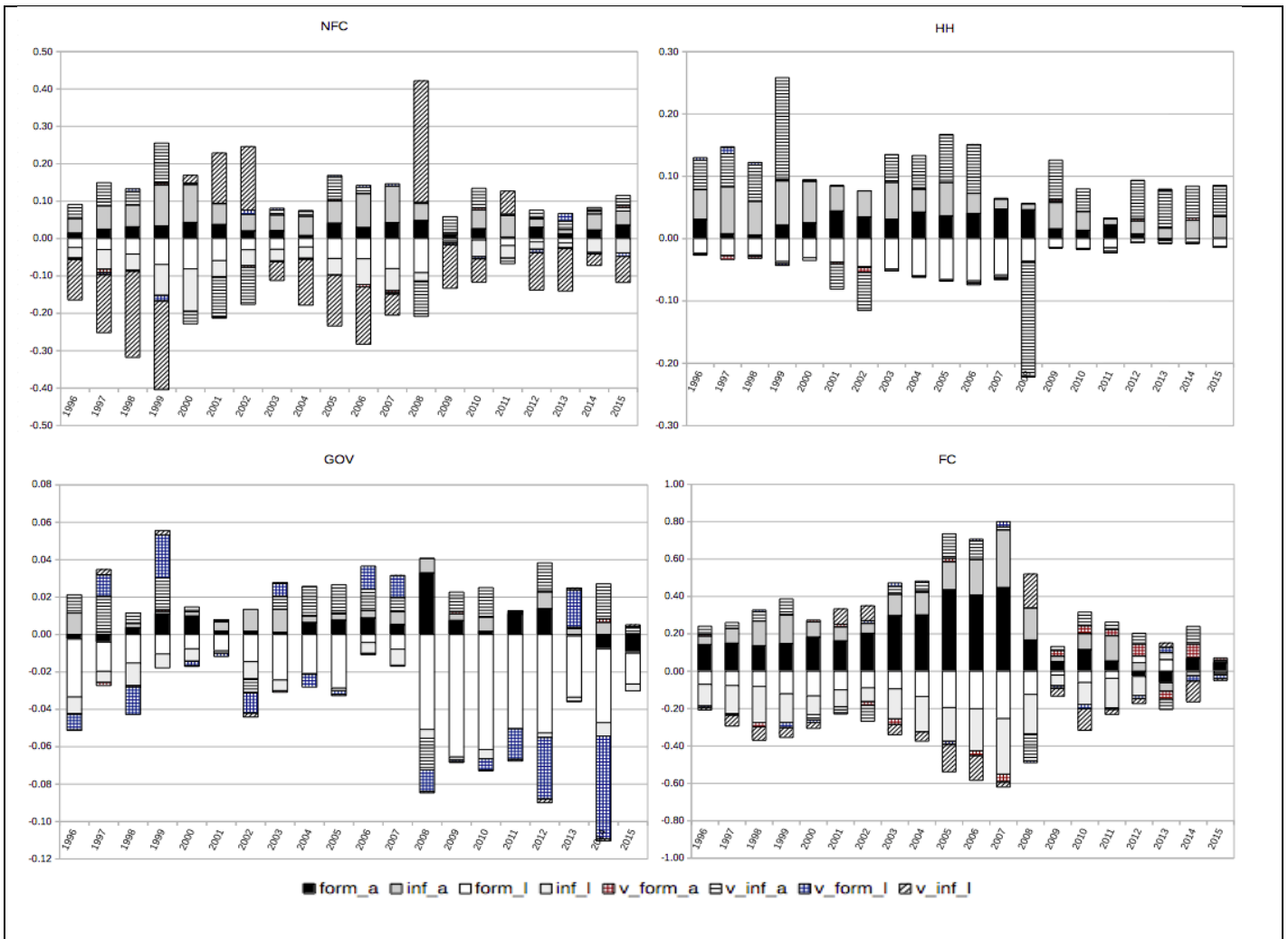Sectorial EU14 average flows. Ratios to GDP

Table 4 – Correlation of sectorial net position with valuation effects and with net saving (2001-15)

	NFC		HH		GOV		FC		RoW	
	val eff	net sav	val eff	net sav	val eff	net sav	val eff	net sav	val eff	net sav
Belgium	0.46	0.09	0.55	-0.01	0.16	-0.13	0.34	-0.43	0.13	-0.39
Denmark	0.35	0.41	0.44	0.11	0.65	0.00	0.55	-0.14	0.70	0.84
Germany	0.77	-0.21	0.77	0.30	0.37	-0.13	0.32	-0.05	0.53	0.66
Ireland	0.33	-0.61	0.70	-0.15	0.67	0.53	0.68	-0.16	0.71	0.05
Greece	0.50	0.38	0.22	-0.71	0.64	0.56	0.87	0.56	0.33	-0.38
Spain	0.14	-0.19	0.68	-0.01	0.75	0.60	0.37	0.49	-0.16	-0.20
France	0.65	0.43	0.69	-0.24	0.42	0.64	0.53	-0.48	-0.10	0.84
Italy	0.19	0.11	0.54	0.66	0.61	0.08	0.14	0.63	-0.09	0.24
Netherlands	0.23	0.78	0.34	0.85	0.42	0.56	0.51	-0.16	0.26	0.78
Austria	-0.17	0.36	0.34	-0.30	-0.05	0.24	0.26	0.71	-0.44	0.20
Portugal	0.21	-0.35	0.39	0.35	0.54	0.34	0.23	0.41	0.33	-0.46
Finland	0.03	-0.37	0.77	0.07	0.75	-0.23	0.78	-0.43	-0.64	-0.83
Sweden	0.61	0.26	0.69	0.48	0.42	0.00	0.43	-0.30	0.50	0.04
United Kingdom	0.63	0.24	0.52	0.44	0.63	0.74	-0.17	0.79	0.68	0.23
average	**0.352**	**0.095**	**0.545**	**0.131**	**0.499**	**0.270**	**0.417**	**0.103**	**0.196**	**0.117**
median	**0.340**	**0.179**	**0.542**	**0.091**	**0.579**	**0.289**	**0.399**	**-0.097**	**0.295**	**0.123**

Figure 4 - Net saving, valuation effects (left scale) and net financial position (right scale)
Ratios to GDP