

What can quarterly euro area accounts tell us about the financial crisis in the euro area?

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Summary

The European Central Bank (ECB) and Eurostat are publishing quarterly euro area accounts by institutional sector (EAA) since June 2007. This rather new statistic provides a comprehensive overview of the euro area as a single economic area and allows for a wide-ranging analysis of the interactions amongst resident sectors (households, non-financial corporations, financial corporations and government) and between them and the rest of the world. It is therefore the ideal framework for the assessment of the current economic conditions, since it links financial conditions to “real economy” developments through a vertical integration of the economic process. Against this background, this paper examines how specific features of the ongoing financial crisis and subsequent economic recession are captured in the EAA information framework.

1. Introduction

After a rather long period of economic growth and positive assets revaluation, the world economy is experiencing a rather unique and challenging period since summer 2007, arising from the collapse of the sub-prime market in the United States. With the existing statistics and tools, the economists around the world are trying to understand the core causes and main consequences of the vulnerabilities of the financial system to minimise the impact of these in the “real economy” and to ensure a fast economic recovery. The EAA provide a unique framework for the analysis of the current economic conditions as it offers a detailed and integrated view of the sector developments and their linkages.

This paper investigates selected evidence provided by the EAA on the impact of the financial crises on some economic developments, namely the profitability of financial corporations and the financing and investment conditions of euro area households and non-financial corporations. The market has shown serious concerns about the sustainability of financial corporations’ profitability. In this context, one starts by looking into different measures of profitability, ranging from narrow national accounts income measures, to broader indicators theoretically closer to business accounting concepts (also taking into account price developments). Subsequently, one analyses the portfolio allocation decisions of households and non-financial corporations, in relation to previous periods of recession and sizable holding losses (“Bear markets”). Finally, one looks into the “financing mix”, i.e. internal (saving) versus external financing of households and non-financial corporations in relation to financial market conditions and to the need of “deleveraging”.

Before drawing on these stylised aspects of economic and financial analysis, one introduces the main concepts around the EAA and presents the main challenges ahead for a completely integrated and timely compilation and dissemination of EAA.

2. The EAA in short

2.1. The current framework

The EAA present a comprehensive overview of the euro area economy, including a breakdown by institutional sector. They show all economic and financial transactions and (changes in) financial

¹ The views expressed are those of the authors and do not necessarily reflect those of the European Central Bank.

balance sheet positions of non-financial corporations, financial corporations,² general government and households, as well as the interactions among them and between them and the (euro area) rest of the world. Moreover, they allow an integrated analysis of the “real” economy (e.g. gross fixed capital formation) and the financial world (e.g. external financing). The EAA are so far expressed in current prices (i.e. only nominal as opposed to real values) and non-seasonally adjusted. Therefore, developments are analysed on the basis of four-quarter moving sums and growth rates are presented as year-on-year changes of transactions (and transactions over stocks for the financial account).

The joint effort by the ECB and Eurostat to compile the EAA is just the visible part of a much broader exercise, very much supported by the euro area national central banks and national statistical institutes. As a matter of fact, the compilation process starts with the transmission of the national financial and non-financial accounts by euro area member states. These are subsequently combined with other euro area data sources, namely the euro area balance of payments and the international investment position, monetary statistics, quarterly government data and the ECB accounts (part of the MFI sector). All other European institutions are treated as non-residents of the euro area, as their administrative competence goes beyond the euro area.

The EAA are not the simple sum of the national accounts of the euro area member countries. The most visible example of this fact being the compilation of appropriate euro area rest of the world accounts, which entails the “consolidation” of the cross-border transactions and positions between euro area member states. This leads amongst other to a much lower level of imports and exports than would result from a simple aggregation of the national data.³ Moreover, this “consolidation” process reveals so-called trade “asymmetries”, as bilateral euro area member states transactions do not mirror each other, which are eliminated to obtain a consistent set of euro area accounts. This implies a small upward adjustment of the expenditure components, namely, household final consumption, and intermediate consumption and capital formation of non-financial corporations.⁴ However, as the adjustment is quite stable over time, it has no significant effect on the growth rate of the macroeconomic aggregates.

Furthermore, the non-financial and financial accounts, including financial balance sheets, are compiled in parallel and integrated in three dimensions. First, for each transaction category (financial and non-financial) and each financial balance sheet category, total uses must equal total resources and total (changes in) financial assets must equal total (changes in) liabilities, when summed over all institutional sectors and the rest of the world (so-called horizontal consistency). For instance, for “compensation of employees”, the sum of the amounts payable (uses) by all sectors and the rest of the world must be equal to the sum of the amounts receivable (resources) by all sectors and the rest of the world (see Table 1). Second, for each sector and the rest of the world, the sum of all resources and changes in liabilities should be equal to the sum of all uses and changes in assets (so-called vertical consistency). In the current EAA this has been achieved by eliminating asymmetries and reconciling the accounts for the general government and financial corporations sectors, as well as for the rest of the world.⁵ There are still statistical discrepancies, equal in amount but opposite in sign, for the households and non-financial corporations sectors, but these are relatively small compared with a simple aggregation of the non-integrated national financial and non-financial accounts data. Third, the change in financial balance sheets (i.e. in stocks) for each financial asset category is equal to the changes arising from financial transactions and from other changes (stock-flow consistency).

² The financial corporations sector is further subdivided into monetary financial institutions (MFIs), insurance corporations and pension funds (ICPFs) and other financial intermediaries, excluding ICPFs (OFIs) in the financial accounts.

³ This deviates from the current quarterly euro area main aggregates (QNA data) practice, which are still compiled as a sum of national data, without consolidation for intra euro area transactions.

⁴ The upward adjustment in intermediate consumption has a downward impact in nominal GDP. However, the overall adjustment amounts to less than 1% of euro area GDP.

⁵ Contrarily to BoP, the EAA shows no “errors and omissions”, i.e. it shows vertical consistency for the rest of the world.

Table 1 Euro area accounts: the sequence of accounts in detail
(EUR billions; four-quarter cumulated flows: 2008Q1-2008Q4, and closing balance sheet: 2008Q4)

	Euro area	Non-financial corporations	Financial corporations				General government	Households	Rest of the world
			Total	MFIs	OFIs	ICPFs			
Transactions									
+ Import									2046.6
- Exports									2079.1
= Trade Balance									-32.5
Gross value added (basic prices)	8315.0	4780.5	403.5				1123.7	2007.4	
+ Taxes less subsidies on products	945.4								
= Gross domestic product (market prices)	9260.4								
- Compensation of employees (pay.)	4429.5	2835.3	223.2				935.8	435.2	
- Taxes on products	232.2	147.2	17.5				20.7	46.8	
+ Subsidies on products	97.0	66.8	.6				4.1	25.4	
- Consumption of fixed capital	1370.3	777.6	45.7				178.1	368.8	
= Net operating surplus and mixed income	2380.1	1087.2	117.7				-6.8	1182.0	
+ Compensation of employees (rec.)	4437.5							4437.5	-8.0
+ Taxes on production and imports less subsidies	1085.3						1085.3		-4.7
+ Property income (rec.)	3836.8	614.1	1969.1				98.8	1154.9	630.7
- Interest (pay.)	2299.4	388.5	1403.5				275.5	231.9	332.9
- Property income attrib. to insur. policy hold. (pay.)	168.4	.0	168.4				.0	.0	1.0
- Rents (pay.)	24.4	14.6	.0				.1	9.7	
= Net entrepreneurial income		1298.2	514.8						
- Distributed income of corporations (pay.)	1351.3	1016.1	335.2						181.0
- Reinvested earnings of direct foreign investment	47.4	42.4	5.0						61.9
= Net national income	7848.9	239.7	174.6				901.7	6532.9	
+ Current taxes on income, wealth, etc (rec.)	1132.8						1132.8		2.1
- Current taxes on income, wealth, etc (pay.)	1124.9	192.4	39.1				1.0	892.3	10.0
+ Social contributions (rec.)	1661.9	62.9	179.2				1415.3	4.4	4.3
- Social contributions (pay.)	1662.8							1662.8	3.5
+ Social benefits other than social transfers in kind (rec.)	1653.0							1653.0	12.8
- Social benefits other than social transfers in kind (pay.)	1663.0	62.3	110.6				1484.3	5.8	2.8
+ Other current transfers (rec.)	677.0	42.6	190.5				69.9	374.1	132.5
- Other current transfers (pay.)	776.2	99.5	194.5				185.3	296.8	33.4
= Net disposable income	7746.8	-9.0	200.1				1849.0	5706.7	
- Final consumption expenditure	7148.4						1886.4	5262.1	
+ Adjust. for the change in net equity of HH in pension fund res.	.2	-1	-66.2				.0	66.5	-2
= Net saving/ current external account	598.5	-9.2	133.9				-37.3	511.1	110.7
+ Capital transfers (rec.)	175.2	79.2	9.8				34.3	51.8	10.2
- Capital transfers (pay.)	162.3	3.8	6.7				116.5	35.3	23.0
- Gross capital formation	2079.5	1146.9	55.4				235.3	641.9	
Gross fixed capital formation	2043.7	1119.9	54.6				235.0	634.2	
Changes in invent. and acq. less disp. of valuables	35.8	27.0	.8				.3	7.7	
+ Consumption of fixed capital	1370.3	777.6	45.7				178.1	368.8	
- Acq. less disp. of non-produced non-financial assets	.5	6.6	.5				.1	-6.8	-5
= Net lending / net borrowing (non-financial accounts)	-98.4	-309.7	126.8				-176.7	261.3	98.4
Statistical discrepancy	.0	1.5	.0				.0	-1.5	.0
+ Net acquisition of financial assets	3210.0	581.7	1856.0	1521.7	79.3	255.0	330.1	442.2	605.8
Monetary gold and special drawing rights	-2.2	.0	-2.2	-2.2	.0	.0	.0	.0	2.2
Currency and deposits	715.1	27.2	185.8	-99.6	227.5	57.9	97.8	404.4	81.5
Debt securities	437.4	-36.8	329.2	491.7	-257.9	95.4	85.2	59.8	470.3
Loans	1201.9	313.0	834.2	637.5	166.4	30.3	58.7	-4.0	36.9
Shares and other equity	225.5	385.6	-65.2	-63.9	-56.3	54.9	72.9	-167.8	3.3
Insurance technical reserves	194.9	1.4	5.0	-1	.0	5.1	.0	188.6	4.9
Other financial assets	437.4	-108.6	569.3	558.3	-3	11.3	15.6	-38.9	6.7
- Net incurrence of liabilities	3308.4	889.9	1729.2	1435.8	73.1	220.4	506.8	182.5	507.4
Currency and deposits	943.0	1.0	940.0	935.3	4.5	.3	1.9	.0	-146.3
Debt securities	774.8	42.6	294.4	-71.9	357.1	9.3	437.8	.0	133.0
Loans	980.5	626.1	90.8	.0	69.2	21.7	62.9	200.6	258.3
Shares and other equity	111.5	249.7	-138.2	127.9	-269.7	3.6	.0	.0	117.3
Insurance technical reserves	199.9	.1	199.3	6.1	.0	193.1	.0	.5	.0
Other financial assets	298.9	-29.6	342.9	438.4	-88.0	-7.6	4.2	-18.6	145.2
= Net lending / net borrowing (financial accounts)	-98.4	-308.2	126.8	85.9	6.3	34.6	-176.7	259.7	98.4
Other financial flows									
+ Financial assets	-6644.4	-2383.6	-2295.5	-302.8	-1468.7	-524.0	-191.7	-1773.6	-804.5
Monetary gold and special drawing rights	18.4	.0	18.4	18.4	.0	.0	.0	.0	.0
Currency and deposits	80.7	22.4	63.1	3.9	57.5	1.7	-6	-4.2	58.1
Debt securities	-61.7	-30.4	71.2	101.1	-45.3	15.3	2.8	-105.2	51.1
Loans	-49.7	-2.5	-49.4	-45.3	-6.9	2.7	1.0	1.3	24.2
Shares and other equity	-6384.5	-2506.0	-2290.8	-278.3	-1472.0	-540.5	-193.5	-1394.2	-927.0
Insurance technical reserves	-255.1	3.1	.5	.0	.0	.5	.0	-258.6	.0
Other financial assets	7.4	129.9	-108.4	-102.6	-2.0	-3.7	-1.5	-12.6	-10.8
- Liabilities	-6436.4	-3810.0	-2777.5	-943.7	-1372.1	-461.7	139.6	11.5	-1030.9
Currency and deposits	107.4	.0	107.5	107.0	.5	.0	-1	.0	31.4
Debt securities	113.7	-2.1	-25.3	4.3	-28.4	-1.2	141.1	.0	-124.2
Loans	15.0	10.7	12.2	.0	8.3	3.9	-4	-7.5	-40.5
Shares and other equity	-6461.7	-3908.6	-2551.4	-924.6	-1439.1	-187.7	-1.7	.0	-849.9
Insurance technical reserves	-255.1	.0	-255.1	.4	.0	-255.5	.0	.0	.0
Other financial assets	44.3	89.9	-65.3	-130.8	86.7	-21.2	.7	19.0	-47.7
= Changes in financial wealth not due to transactions	-208.0	-1426.4	-482.0	-640.9	-96.6	-62.3	-331.3	-1785.1	226.4
Financial balance sheets (closing)									
+ Financial assets	73125.9	14160.4	39176.6	23728.5	9484.6	5963.5	3159.6	16629.4	14898.2
Monetary gold and special drawing rights	221.8	.0	221.8	221.8	.0	.0	.0	.0	.0
Currency and deposits	13666.0	1835.6	5068.9	2393.9	1800.1	874.8	641.5	6120.0	4206.6
Debt securities	10701.6	308.1	8716.1	4408.1	1959.5	2348.4	360.5	1316.8	3797.8
Loans	18272.3	2531.9	15232.2	12755.1	2112.2	364.8	442.6	65.7	1775.9
Shares and other equity	17885.7	6067.4	6931.8	1599.1	3413.1	1919.6	1136.0	3750.4	4434.8
Insurance technical reserves	5432.8	136.9	144.2	1.8	.0	142.3	3.1	5148.6	149.3
Other financial assets	6945.8	3280.4	2861.7	2348.6	199.6	313.5	575.8	227.9	533.8
- Liabilities	74693.9	22408.4	38459.7	23111.9	9233.0	6114.7	7468.4	6357.4	13108.5
Currency and deposits	15195.8	26.0	14915.2	14889.8	23.5	1.9	254.6	.0	2676.9
Debt securities	11635.9	735.5	5348.4	3095.1	2210.1	43.2	5552.0	.0	2863.5
Loans	17100.7	8207.0	1948.2	.0	1735.4	212.8	1257.4	5688.0	2947.5
Shares and other equity	18240.2	10273.2	7962.7	2445.9	5057.2	459.6	4.3	.0	4080.3
Insurance technical reserves	5582.1	328.7	5219.3	61.9	.6	5156.8	.5	33.6	.0
Other financial assets	6939.2	2838.0	3065.9	2619.2	206.2	240.4	399.6	635.7	540.3
= Net financial wealth	-1568.0	-8248.0	716.9	616.6	251.5	-151.2	-4308.9	10272.0	

For the euro area as a whole, as well as for the individual institutional sectors, macroeconomic aggregates are derived from a sequence of accounts. Each of these accounts covers a specific economic process, ranging from production, income generation and income (re)distribution, through the use of income for consumption and investment, to financial transactions such as borrowing and lending. Each account is summarized by a balancing item, e.g. disposable income, which can be measured in “gross” or “net” terms, depending if calculated before or after accounting for consumption of fixed capital (“depreciation”).

Table 1 shows some of the main economic and financial aggregates that describe the institutional sectors of the euro area and their interaction with the rest of the world. In 2008, “gross value added” was mostly generated by non-financial corporations (57%), but households (24%), financial corporations (5%) and general government (14%) also contribute to this broad measure of economic activity. The value added created by households originates from family enterprises and non-profit institutions serving households (NPISHs) and imputed income from owner-occupied dwellings. By far the largest share of gross domestic product (which comprises all domestic value added and product taxes) accrues as income to households; this is accounted for by the compensation of employees (wages and salaries plus employers’ social contributions) and the value added that they generate themselves.

The disposable income of households is determined by the compensation of employees, mixed income (accruing to self-employed households) and operating surplus (from small family enterprises and from owner-occupied dwellings), property income (mainly interest and dividends receivable minus interest payable) and transfers to and from the government sector (social security benefits minus social security contributions and taxes payable). The accounts also show that households consumed about 87% of their gross disposable income and saved 13% in 2008.

As already mentioned, the integration of the non-financial accounts with the financial accounts allows a comprehensive analysis of the relationships between financial and non-financial (“real”) transactions. Euro area households’ savings plus net capital transfers receivable largely exceed their non-financial investment (which is mainly in dwellings). This means that the household sector has a surplus of funds and is thus a net lender to other sectors. In line with this, the financial transactions account reflects that households’ net acquisition of financial assets largely exceeds their net incurrence of liabilities. The opposite is generally true for non-financial corporations and general government, which are net borrowers, while financial corporations usually have a modest surplus of funds. On balance, in the four quarters of 2008, the euro area had a small deficit on the current (and capital) account of the balance of payments, and therefore a surplus on the non-financial transactions account of the rest of the world.⁶ In other words, the euro area was a modest net raiser of funds, which is reflected in the financial transaction account of the rest of the world as an excess of net acquisition of financial assets over the net incurrence of liabilities.

With the EAA, it is now also possible to derive quarterly measures of profits and internal financing for both financial corporations and non-financial corporations. Entrepreneurial income is a core indicator for corporations’ profitability and, as mentioned, can be measured in net or gross terms. Gross entrepreneurial income is a concept that is comparable to current profits plus depreciation allowances in business accounting (after the deduction of net interest payable and including the profits of foreign subsidiaries, but before the payment of dividends and income taxes).⁷ Entrepreneurial income less income taxes payable – after the distribution of income to owners (including all dividends and the retained earnings that accrue to foreign direct investors) – yields (national) corporate saving. This is a measure for internal financing. Net saving is comparable to retained earnings in business accounting.

The financial balance sheets show the financial position of the sectors, broken down into the same categories of financial assets and liabilities (such as deposits, loans and shares) as distinguished in the financial transactions accounts. The financial assets and liabilities are generally valued at market prices, which means that they change as a result not only of financial transactions (acquisitions less

⁶ The balance of payments is drawn up from the perspective of the total euro area economy, whereas the EAA is designed from the rest of the world viewpoint.

⁷ A more detailed comparison of corporate profits to national accounts profits concepts are presented in Section 3.1.

disposals) but also of other changes in assets. These mainly reflect revaluations due to changes in the market prices of financial instruments, although debt write-offs, for instance, are also covered. Finally, apart from its core use for financial and economic analysis (monetary policy purposes), the EAA is being gradually used for financial stability assessment purposes, by providing a valid input for a sectoral balance-sheet approach to macro prudential analysis (as favoured, for instance, in the so-called IMF “balance sheet approach”).⁸ In this context, EAA data could be used to measure vulnerabilities and interlinks between balance sheets of the various euro area (and EU) economic agents (sectors) to show how local financial shocks can spread through system and affect balance sheets of other parts of the economy.

2.2. The challenges ahead

While everybody recognises that the compilation and release of integrated quarterly financial and non-financial euro area accounts was a major joint achievement of the European Statistical System (ESS) and the Eurosystem, the work is not yet complete and major challenges are still to come. In this context, the relevant fora, namely the joint Eurostat/ECB Task Force on Quarterly Sector Accounts (TF-QSA) and the Statistics Committee (STC) of the European System of Central Banks (ESCB) through its Working Group on Euro Area Accounts (WG EAA), are leading the necessary development efforts to accomplish the outstanding tasks. In short, these tasks are:

a. Timeliness – T+90 days

Timeliness is a key aspect for EAA users (in particular internal ECB users). They have strongly pointed out to the need of having EAA at T+90 days after the end of the reference quarter to ensure a thorough use of the EAA for monetary policy purposes. As this would, in comparison to the current practice, allow a more in-depth analysis of quarterly financial and non-financial developments one Governing Council meeting before, and at the same time as the second release of euro area GDP.

EAA are currently published at T+120 days after the end of the reference quarter. This is based on non-financial accounts input data received at T+90 days and financial accounts data received at T+110 days. At release date, EAA are consistent with other major data sets, namely quarterly public finance statistics and monetary statistics, and rely heavily on euro area BoP. A timeliness improvement will heavily depend on the availability of national quarterly accounts, but also on these other euro area data sets.

b. Coverage

Focus is also on improving the completion/coverage of the EAA framework. This mainly entails the production of estimates of non-financial assets broken down by sector, the compilation of ‘from-whom-to-whom’ detail for all financial asset categories and certain non-financial transactions (e.g. interest), a further analytical split of the economic flows and the compilation of consistent Supply/Use and Input/Output tables (SUT/IOT). The euro area SUT/IOT will provide detailed information for the analysis of the structure of the euro area economy, but it will also supply a valuable input for a more elaborated allocation of goods and services asymmetries and therefore contribute to the overall EAA quality.

Economic flows (changes in balance-sheets) are currently broken down into transactions and other flows. The latter will be further subdivided into price changes, write-offs and statistical reclassifications to better assist the analysis of net worth changes. Similarly, estimates of non-financial assets will allow the compilation of euro area net worth and, consequently, a more detailed study of the actual households’ wealth effects.

Finally, ‘from whom-to-whom’ data opens a completely new avenue for the analysis of detailed sectoral interactions, financial structures and perceived financial imbalances or potential sources of instability.

⁸ M Allen et al., 2002

c. Seasonally adjusted data

The availability of seasonally adjusted data is a core requirement for a more accurate analysis of quarterly information, mainly as regards quarter on quarter developments. Although Eurostat already releases selected seasonally adjusted indicators (headline indicators and respective main components), a more comprehensive approach to seasonal adjustment for relevant EAA variables, particularly in strict connection with the corresponding Quarterly National Accounts (QNA) aggregates, will have to be implemented.

As EAA accounts are compiled in non-seasonally adjusted terms and the transmission of national seasonally adjusted data is not foreseen in the near future, a research agenda is already in motion to explore the possible avenues to the seasonal adjustment of the EAA, including the rest of the world account.

d. Revisions practice/policy for the EAA

To strike the right balance between reliability and time-series stability, which would ultimately benefit both users and producers, the ESS and the Eurosystem are working on the definition of a harmonised and consistent revision policy for the EAA.

In view of its cross sectional nature, the EAA draws on a large set of data sources, both at national and European levels. In this context, defining a revision policy for the EAA not only requires coordination between European and national aggregates, but also between the various statistical domains at both levels. This coordination exercise has two dimensions: timing of release and depth or length of revisions. As both dimensions are already rather well defined for each statistical domain and, not much effort has been done so far to coordinate even at national level between statistical domains, this endeavour is proving of difficult implementation.

3. The evidence of the financial crises

The collapse of the sub-prime market in the United States, in the summer of 2007, has triggered a series of events which have unveiled the weaknesses of the financial system and considerably jeopardized economic progress and welfare.

As a first round effect, the financial system had to write-down enormous amounts of structured assets related to the sub-prime market which raised serious concerns about current and future prospects for profitability in the financial sector. As market confidence and trust gradually vanished, financing conditions tightened and liquidity became scarce, which ultimately resulted in the bankruptcy of several major financial institutions, particularly Lehman Brothers (one the largest USA investment banks) in September 2008. This generalised lack of confidence and liquidity has also changed financial investment decisions across all institutional sectors.

The instability of the financial system reached its apices in the last quarter of 2008 and the mild cyclical slowdown in economic activity, observed until the summer 2008, abruptly turned into a pronounced contraction by year-end, with a shrinking global demand and consequent drop in capacity utilisation and capital formation

Although currently with a long time lag, the EAA provide the tools for the analysis of the reasons and consequences of all these financial and real developments. The following three sub-sections provide selected evidence of the financial crisis as seen in the EAA. This paper, however, does not aim at comprehensively explaining the causes and consequences of the latest financial and economic developments.

3.1. Profitability concerns for the financial sector

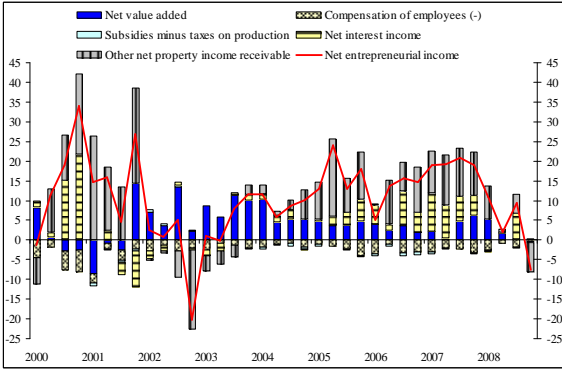
Economic and financial analysis relies on several data sources, which are frequently difficult to compare and in many occasions seem to provide contradictory messages. One of the most difficult cases is the comparison between aggregated accounting profit and loss statements for the financial

sector and the income measures available from national accounts. This difficulty primarily arises from the strict separation of income and valuation changes in the national accounts. Broadly speaking, the business accounting concept of profit and loss (net income for the year) translates into the separate national accounts concepts of “income” and “holding gains and losses”. Another relevant difficulty arises from the residency/coverage concept (‘home-country’ versus ‘host-country’ approach). Whereas national accounting follows the ‘host-country’ approach, i.e. it covers all entities that are ‘host’ in the euro area independently of having or not their headquarters in the euro area, the usual business accounting principles refers to the overall profitability of home-owned entities/groups, including foreign subsidiaries and branches of resident institutions but excluding resident entities with headquarters outside the euro area.

A generalised “bridging table” between the two accounting worlds would be quite useful. Unfortunately, business accounting standards vary substantially, both in format and in content, and not only from one country to another but also from one enterprise/sector to another. This makes it impossible to develop a standardised “bridging table”. In addition, business accounting standards are going through a phase of major development with the introduction of the new International Financial Reporting Standards (IFRS). Although these new standards attempt at reconciling the currently rather diverging national business accounting rules, in practice they still provide a considerable degree of flexibility, which does not facilitate cross-country comparisons. This contrasts with the well documented and standardised national accounting recording rules.

Net entrepreneurial income (broadly the operating and financial income after depreciation and before dividend distribution) is the preferred national accounts balancing item to measure “narrow” corporate profitability. Graph 1 below shows that financial corporation’s income contracted by close to 8% year-on-year in 2008Q4, a sharp reversal after a still solid increase in 2008Q3 (over 9%), and not seen since the sharp negative growth of 2002Q4. This was essentially due to a steep fall in dividends earned, although all components have contributed in the same direction, including net value added, net interest income and compensation of employees.

Graph 1 Net entrepreneurial income of financial corporations
(Annual percentage change; percentage point contribution)



In a broader concept, net income of the financial sector (business accounting) could be derived according to equation 1 below, i.e. as net saving corrected for distributed dividends and after accounting for other flows in financial assets. However, in addition to the drawbacks already mentioned, it should also be taken into account that although equation 1 contains all holding gains and losses (both realised and non-realised), in business accounting holding gains/losses are in most cases only accounted for in profit and losses when realised, since a considerable part of the balance sheet is not at fair value.⁹ Overall, net income measures from the business accounting should be somewhere in-between the narrow income measures of national accounts (like net entrepreneurial income) and the broad definitions encompassing all other flows (equation 1).

⁹ Moreover, a considerable amount of the national accounts other flows relate to e.g. reclassifications, which would need to be removed to compile a more reliable proxy of corporate profitability comparable with business accounting

Equation 1: Net income relation between business and national accounts concepts

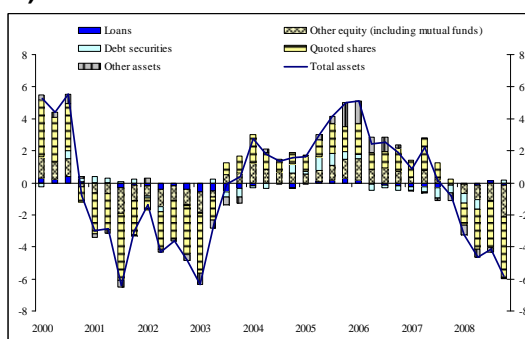
$$\begin{aligned} & \text{Net income (business accounting)} \\ & = \\ & \text{Net saving (B8N) + distributed income of other corporations paid (D42.1) + other volume changes in} \\ & \text{financial assets and liabilities (K10) + nominal holding gains and losses (K11)} \end{aligned}$$

The overall decline in the annual growth rate of direct taxes paid since the beginning of 2008 hinted to substantial losses on financial assets. This is indeed confirmed by the developments in the growth rate (4-quarter sums of other flows over outstanding amounts one year before) of other flows as presented in Graph 2a. The “bear” market has turned the growth rate of other flows substantially negative in 2008, reaching almost -6% in 2008Q4. As expected, this development was mainly driven by the equity market. Moreover, the positive effect of interest rates on the development of debt securities prices seems to have been surpassed by the negative impact of write-downs of “toxic assets” and the increase in the risk premium, particularly between 2007Q2 and 2008Q2.

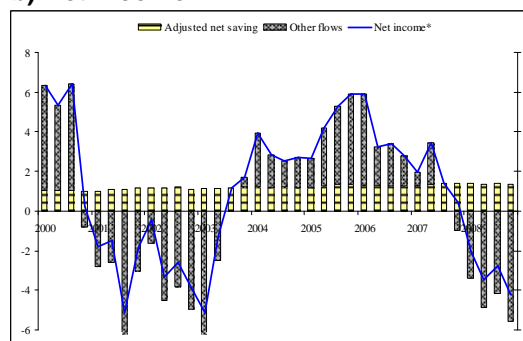
Graph 2 Other flows’ and net income developments of financial corporations

(Annual growth rate; percentage point contribution)

a) Other flows



b) Net income



* As defined in equation 1.

Graph 2b shows the two components together, i.e. the rather stable income component, which represents between 1-2% of financial assets (although generally growing over the period in analysis), and the very volatile other flows component, which is the one actually driving profits in business accounting. Although none of the two components should be taken at “face value” to define profitability, they both point in the same direction, while with a certain lag. For example, in this context of lower business profitability and generalised uncertainty over the economic future, it is reasonable to expect that financial institutions would be more cautious in the distribution of dividends, which in terms of income will only materialize in the first quarters of 2009.

3.2. The search for safety and liquidity

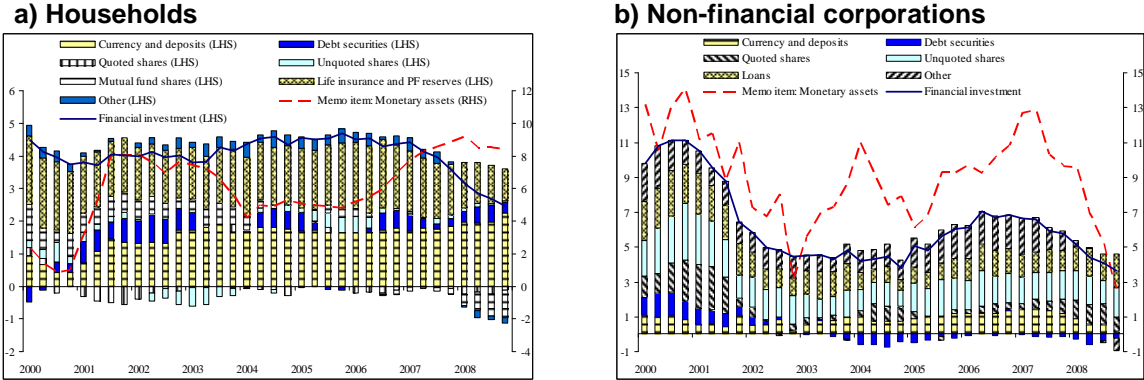
The world economy suffered a major economic slowdown in the period 2001-2002, arising from the burst of the so-called “.com” bubble which was followed by the 11 September 2001 terrorist attacks. At that time, households shifted most of their investments into more secure assets (monetary assets and debt securities), away from risky and less liquid instruments, mainly quoted shares (Graph 3a). Overall, one had however not experienced a sizable drop in financial investment, but rather a re-organisation of the portfolio to avoid the negative impact of equity prices’ developments on financial wealth.

The current financial and economic crisis is proving to be different from that of the beginning of the 21st century in terms of portfolio decisions. To start with, its financial component brought severe liquidity constraints to the economy, which ultimately is driving considerably down total financial investment of households since the beginning of 2007. Indeed, the annual growth rate of households’ financial investment reached 2.5% in 2008Q4, following an average of 4.2% over the period 2000-2006. This decline was mainly driven by stronger net sales of shares and other equity, as well as by the lower net accumulation of life insurance and pension funds reserves. The latter clearly reveals the preference of households to invest in more liquid assets (monetary assets such as currency and deposits), also in view of their deteriorating confidence in future economic prospects and the

historically low opportunity cost of holding cash. This des-investment process can also be seen in the context of a broad “deleveraging” process and the preference for mortgage redemption.

Another aspect worth noticing is the clear reversal of households’ preference for mutual funds shares in the last two years (since 2006Q3). In the previous economic slowdown, although households had disinvested in equity, they kept investing in mutual funds shares at a rather high and stable rate (although with a shift from equity to bond funds). On the contrary, this time one has witnessed large withdrawals from mutual funds shares, following major write downs of (structured) debt securities and generalised uncertainty over the financial sustainability of many financial intermediaries.¹⁰

Graph 3 Financial investment decisions
(Annual growth rate; percentage point contribution)



In turn, non-financial corporations evidence a clear reduction in liquidity when facing economic slowdowns. Reductions in turnover generate cash-flow pressures which are overcome by drawing on liquid assets, mainly monetary assets. This was already observed in 2001-2002, but was even more acute in 2008 with the annual growth rate of investment in monetary assets dropping from approximately 13% in 2007Q2 to below 3% in the last quarter of 2008 (Graph 3b). Obviously, this sharper movement is directly associated to the very nature of this economic slowdown, which was preceded (or accompanied) by a generalised financial crisis.

One remarkable feature of the current recession is the sustained level on investment in equity, particularly quoted shares (mainly until 2008Q3), which cannot be completely explained by the level of mergers and acquisitions in the non-financial sector. One possible explanation is that non-financial corporations may have initially perceived equity prices as attractive after the first drops in asset prices, which would have been considered as only temporary.

3.3. Capital formation and financing decisions

The period from the beginning 2003 to end-2006 was marked by heterogeneous developments in the housing market around Europe. Whereas in few central European countries housing prices were rather sluggish (notably Germany), and consequently financing needs, in other countries one has observed major price developments and comparatively high growth rates of loan financing. For the euro area as a whole, one recorded an annual percentage change of households’ non-financial investment (gross capital formation) generally well above 7% over that period, before a steep drop that started in the beginning of 2007 and culminated with an annual percentage change of -5.3% in the last quarter of 2008 (Graph 4a).

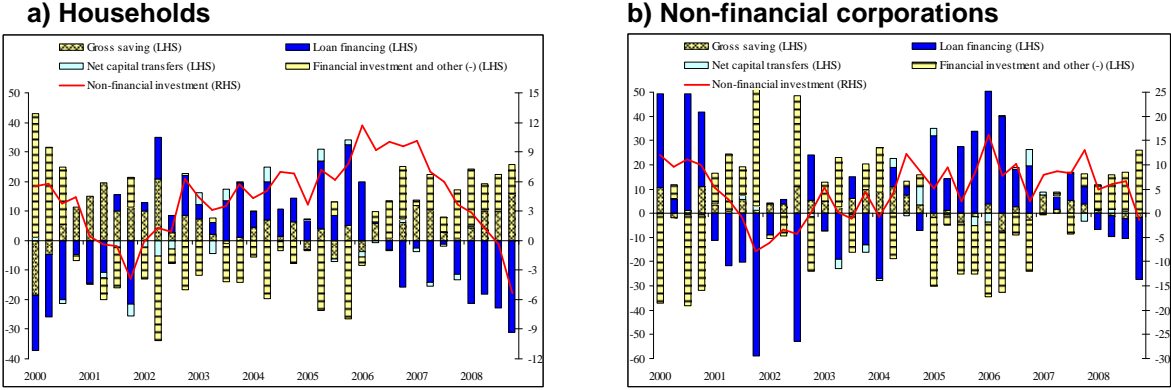
The annual percentage change of households’ gross disposable income decreased abruptly to 2.7% in 2008Q4, from a steady growth of over 4% in the last 3 years (4.7% in 2008Q3). However, as households have held back consumption, in view of the current negative economic sentiment and extensive portfolio holding losses (the annual percentage change of financial consumption dropped

¹⁰ Structured assets are those assets created, decomposed, or restructured in some fashion in order to redirect or alter underlying cash flows. This may be accomplished by altering the properties of physical assets, such as bonds or equities, through the use of special purpose entities/trusts and/or through the inclusion of derivatives.

from 4.1% in the third quarter to 1.2% in the last quarter of 2008), gross saving maintained its robust year-on-year percentage change, which contributed to a slight increase in households' saving ratio. Actually, internal financing (saving) has been the driving force of households' non-financial investment in the last two years, as one has observed a clear financial "deleveraging" process, i.e. households are gradually reducing both, their net acquisitions of financial assets and incurrence of liabilities. This is reflected in the annual growth rate of loans taken by households, which has reached 3.7% in 2008Q4, its lowest reading since the beginning of the EAA time series (1999Q1).

Graph 4 Non-financial investment and financing needs

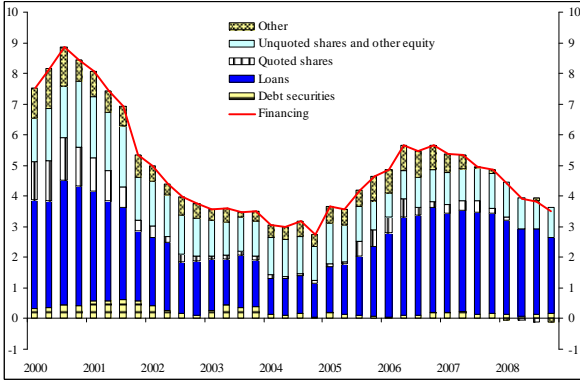
(Annual percentage change; percentage point contribution)



As regards non-financial corporations, the picture is not very different from that depicted for the households sector. The annual percentage change of non-financial corporations' gross capital formation turned negative (-1.4%) in the last quarter of 2008, after a long period of considerable positive growth (since 2004). However, the pressure over the income side contributed still to a slight decrease of the share of gross saving to gross capital formation to around 67%, down from the peak of over 88% reached in the beginning of 2004, showing yet no turning point in the financing mix, from external to internal funding of non-financial investment.

Graph 5 Non-financial corporations financing development

(Annual growth rate; percentage point contribution)



The decrease of capital formation contributed to a reduction in the net borrowing requirements of non-financial corporations. In this context, the annual growth rate of non-financial corporations ("external") financing continued to decline, reaching 3.5% in the last quarter of 2008, over two percentage points below the highest point since the 2001-2002 recession (Graph 5). This was mainly due to the continuous fall in the annual growth rate of loans, to 8.2% in 2008Q4 (after over 11% in 2006-2007) and to a subdued issuance of equity (mainly quoted shares), since the annual growth rate of debt securities issued increased slightly in 2008Q4 to 6.1%, from 5.4% in Q3. This indicates a certain substitution effect between loan financing and debt securities financing (financial "disintermediation"), at least for those companies with access to the debt market, caused by the more difficult access to the former.

4. Conclusion

The collapse of the sub-prime market in the United States, in the summer of 2007, has triggered a series of events which have unveiled the weaknesses of the financial system and considerably jeopardized economic progress and welfare. This paper attempted to show, by using the newly published EAA, the impact in the behaviour of economic agents (institutional sectors) of the recent economic and financial developments. It presented evidence on selected topics, namely, the profitability of financial corporations and the financing and investment conditions of euro area households and non-financial corporations.

As regards financial corporations' profitability, one concluded that "pure" national accounts income measures, although evidencing a slight deterioration, are still quite solid and seem resilient to the abrupt movements in the equity and money markets. On the contrary, broader indicators of profitability, i.e. closer to business accounting, also taking into account price developments, show a considerable deterioration of the profitability of the financial sector arising from sizable holding losses in 2008.

The extended EAA framework allows the integration of monetary aggregates concepts in the context of sectoral analysis. This inter-linkage allows the confirmation of the empirical evidence of households' preference for liquid and safer assets during recession periods, which are usually preceded by "Bear" markets. This seems indeed the case in the current financial and economic turmoil. In contrast, liquidity constraints arising from the drop in economic activity and consequent decrease in cash flows made non-financial corporations resort to their liquidity buffers.

The vertically integrated presentation of the accounts (financial and non-financial accounts) allowed looking into the "financing mix", i.e. internal (saving) versus external financing. In this respect the picture is not considerably different for households and non-financial corporations, only deviating in terms of turning point. While households have shown an inversion of the financing mix towards internal financing ("deleveraging") already in the beginning of 2007, non-financial corporations still do not show a clear turning point in their financing mix; although lower capital investment is requiring lower financing needs.

This analysis would have benefited considerably from the availability of additional data, namely seasonally adjusted data and the stock of non-financial assets. The former would permit a better identification of turning points by looking into quarterly developments instead of annual growth rates, while data on non-financial assets (e.g. dwellings) would give a better indication about wealth effects. The foreseen EAA developments would cope with these challenges.

References

1. Allen, M; Rosenberg, C. B.; Keller, C; Setser, B and Roubini, N: *A Balance-sheet Approach to Financial Crisis*, IMF Working Paper 02/210, December 2002
2. Colangelo, A and Mink, R.: Bank services - some reflections on the treatment of default risk and term premium, ISI Conference in Durban - *South Africa*, August 2009
3. ECB: *Balance Sheet contagion and the transmission of risk in the euro area financial system*, Financial Stability Review, June 2009
4. ECB: *Box 3 - Integrated euro area accounts for the fourth quarter of 2008*, Monthly Bulletin, May 2009
5. ECB: *The introduction of quarterly sectoral accounts statistics for the euro area*, Monthly Bulletin, November 2007
6. ECB: *Saving, financing and investment in the euro area*, Monthly Bulletin, August 2002
7. ECB: *Financing and financial investment of the non-financial sectors in the euro area*, Monthly Bulletin, May 2001
8. Eurostat: *European System of Accounts (ESA 1995)*, 1996
9. Gadsby, R. and Giron, C.: *Institutional investors in euro area accounts*, ISI Conference in Durban - *South Africa*, August 2009
10. McIntosh, S. H., J. M. Scherschel and A. M. Teplin: *Use Of Flow Of Funds Accounts For Policy Making At The Federal Reserve*, presented at Central Bank Uses of Financial Accounts (ECB seminar), November 1999
11. Mink, R, Sandars, P. and Silva, N.: *Financial and Non-financial Accounts for Monitoring Financial Stability*, IFC Bulletin, October 2005
12. Mink, R: *Quarterly Monetary Union Financial Accounts for ECB Monetary Policy Analysis*, IFC Bulletin, October 2002
13. Mink, R: *Monetary Union Financial Accounts for ECB Monetary Policy Analysis*, presented at Central Bank Uses of Financial Accounts (ECB seminar), November 1999
14. Palumbo, M. and Parker, J.: *The integrated financial and real system of national accounts for the US: Does it presage the financial crises?*, National Bureau of Economic Research, January 2009
15. Teplin, A. M.: *The U.S. Flow of Funds Accounts and Their Uses*, Federal Reserve Bulletin, July 2001
16. Trichet, J-C: *The ECB's enhanced credit support*, keynote at the University Munich, July 2009
17. United Nations, Eurostat, International Monetary Fund, Organisation for Economic Cooperation and Development and World Bank: *System of National Accounts 1993 (SNA 93)*, Series F, No. 2, Rev. 4