Using external balance sheets to identify macro-economic imbalances in the euro area

Everett, Mary^{*} Central Bank of Ireland, Statistics Division Spencer Dock, Northwall Quay Dublin 1, Ireland E-mail: <u>mary.everett@centralbank.ie</u>

Abstract

Over the past decade, a number of euro area countries experienced persistent and increasing current account deficits. The underlying causes of these deficits represent disequilibria in the domestic macro-economies as manifested through the excessive foreign borrowing. While foreign borrowing can enhance economic growth and related employment, rapid increases in such borrowing, can contribute to imbalances in the domestic economy, if used unproductively. Unproductive investment has implications for the domestic economy's ability to sustain foreign borrowing as the investment must generate a rate of return that is at least sufficient to service foreign debt. Consequently, the structure of the foreign capital inflows provides insight into the rationale underlying foreign investors' behaviour.

Early warning signals that could have been employed to assess the sustainability of foreign funding would have been useful for highlighting the capability of euro area countries to absorb external shocks arising from the international financial crises and related spillover effects to other sectors of their economies. This paper explores whether structural shifts in the composition of foreign financing across various sectors of domestic economies could have provided a warning signal for the macro-economic imbalances now being endured across a range of euro area countries.

Keywords: external balance sheet, international investment position, imbalances, external debt, sustainability

JEL classification: F21, F34, F36

*The author is a Senior Economist in the Statistics Division of the Central Bank of Ireland. The views in this paper are the sole responsibility of the author, and should not be interpreted as reflecting the views of the Central Bank of Ireland or the European System of Central Banks. The author would like to thank Joe McNeill for helpful comments and suggestions.

Introduction

While foreign investment can enhance economic growth and consequently employment, rapid increases in foreign borrowing utilised unproductively can contribute to imbalances in the domestic economy. Unproductive investment not only has implications for the domestic economy, but also for the sustainability of foreign borrowing, as the investment must generate a rate of return that is at least sufficient to service the foreign debt. Examining the type of financial instruments employed, and their uses within the domestic economy can, therefore, provide insights into the level of foreign borrowing, which can be sustained.

This article considers the requirements for external funding by the euro area and a number of euro area economies in recent years by considering the underlying components of the funding of current account deficits prevalent in a number of countries since the early 2000s. The composition of capital inflows that funded these current account deficits is then explored. Examining the structure of foreign investment provides insight as to whether these imbalances were concentrated within specific sectors of euro area economies. Whether the development of these external deficits should have triggered early warning signals is then examined. In that context, the sustainability of these imbalances is considered by utilising IIP¹ data as an indicator of external indebtedness. Finally an overview of those countries that funded parts of these euro area imbalances is presented, followed by some concluding remarks.

External borrowing requirements

Changes on the current account balance reflect alternations in savings and investments decisions arising from fluctuations in expenditure and income patterns within the economy, i.e. a smaller deficit or larger surplus will reflect an increase in savings relative to investments. Chart 1 presents the level of average investment compared with nominal GDP growth for the euro area² and its member states from 2003 to 2008³.

¹ A country's external balance sheet, also known as IIP, is a financial statement summarising the economy's external financial assets and liabilities. IIP represents resident holdings of foreign assets, and the financial obligations that residents have to non-residents, who have invested in their economy. In other words, the IIP is the net stock (assets minus liabilities) of the economy's international investments. The current account balance is equal to the change in IIP having controlled for valuation effects in exchange rates and market price changes.

³ The period 2003 to 2008 is chosen as this is when current account deficits are most prominent. ⁴ Improved statistical coverage also contributed to the higher external debt levels.

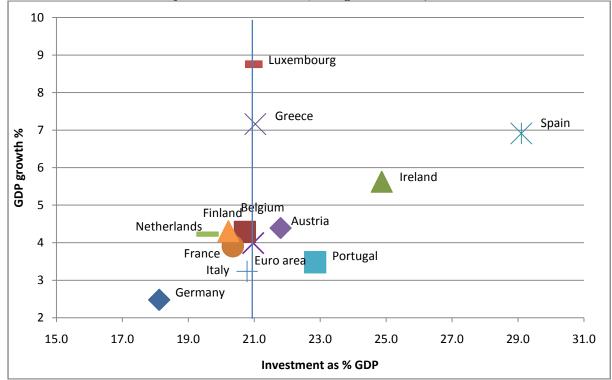


Chart 1: Investment ratios of euro area countries (average 2003-2008)

Notes: (i) Investment and GDP growth are calculated using the formula: $[{X_t - X_{t-p}} / X_{t-p}] \times 100$, where p=4 quarters prior. (ii) Data are sourced from Eurostat.

Euro area investment as a proportion of GDP was on average twenty one per cent between 2003 and 2008. Chart 1 displays the Member States average investment over this period. The majority of countries whose investment was in excess of the euro area average are mainly those termed as "peripheral" countries that have entered the IMF/EU programme over the past year. Spain and Austria also invested amounts greater than the average euro area investments during this period. Significant nominal GDP growth was experienced by Greece, Ireland and Spain during this period, at levels far greater than the average growth for the euro area of around four per cent, although Portugal had lower levels of growth than the euro area average.

Countries whose domestic investment requirements were not able to be financed by national savings were required to borrow from abroad. The current account deficits can, therefore, also be thought of as the value of domestic economic activity financed by foreign savings. It is natural to assume that widening current account deficits are accompanied by falling savings and/ or increasing investments. Chart 2 displays the requirements for external financing, for the euro area and member states, on average between 2003 and 2008.

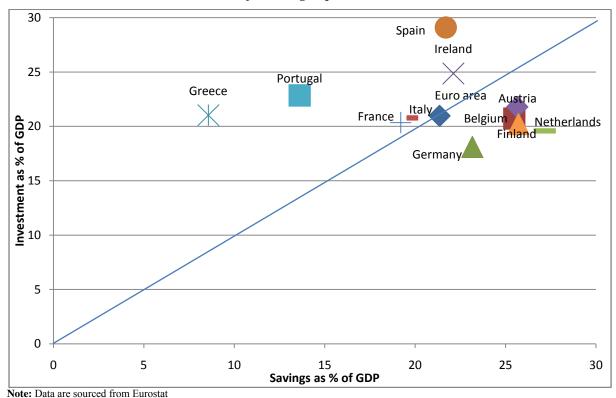


Chart 2: Euro area countries' external financing requirements

For those countries above the line, external financing was required. The requirements for external financing are evident for Ireland, Spain, Portugal, Greece and Italy and France.

While a persistent and growing current account deficit can be seen as an indicator of an overheating of the economy, the deficit itself should not be the primary object of economic analysis. Instead the focus should be on the composition of the deficit, which may represent disequilibrium in the domestic macro economy. Unsustainable capital inflows, leading to persistent current account deficits create macroeconomic imbalances and impact on the growth prospects for the economy. This phenomenon is clearly evident for a number of euro area economies that developed persistent current account deficits over the past decade, see Chart 3.

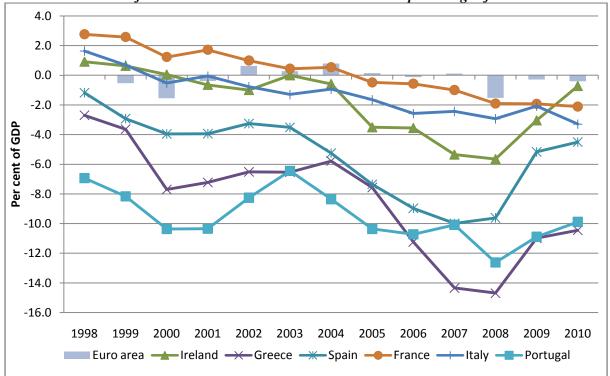


Chart 3: Euro area deficit countries current account balances as a percentage of GDP

Those countries that experienced high levels of investment growth generally had significant current account deficits. The composition and sustainability of the capital inflows funding these current account deficits is addressed in the following sections.

Indications of imbalances

While international capital inflows as a means of funding an economy's investment are generally necessary for economic growth, a rapid increase in these capital inflows persistently used to fund shortfalls in domestic investment can, however, lead to structural macro-economic imbalances within an economy. In particular, whether foreign borrowing is driven by cyclical or structural factors can have important implications for the sustainability of domestic investment. Consideration of the composition of investment can, therefore, serve as a useful indicator both of the performance of the external economy, and the interaction between the domestic and external economy. Analysing the components of international capital flows and related servicing costs provides insight into whether foreign borrowing is being employed productively, and is, therefore, sustainable over time. Unproductive investment has implications for an economy's ability to maintain foreign borrowing as the investment must generate a rate of return that is at least sufficient to service the foreign funding. In this context, an assessment of whether the volume of externally generated debt can be sustained also needs to be conducted.

Note: Data are sourced from Eurostat.

Composition of foreign investment

Despite the broad neutrality of Euro area current account balances, as evident in Chart 4, the net external position on the euro area external balance sheet deteriorated at an increasing rate from 2005 onwards, peaking at end-2008. Revaluation effects due to exchange rate changes, including the appreciation of the euro in 2007, as well as asset price changes and other adjustments all contributed significantly to the higher external net liability position for the euro area⁴. While net transactions in euro area external assets and liabilities were relatively small over the period, these other changes were primarily responsible for the increasing net liability external position.

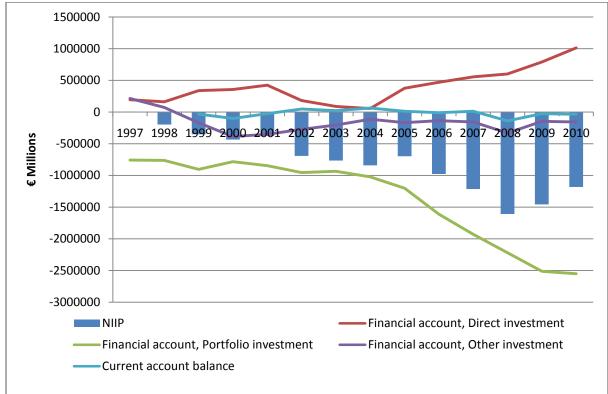


Chart 4: Euro area Net IIP

Note: Data are sourced from the ECB's Statistical Data Warehouse.

The composition of euro area net IIP by functional category is also presented in Chart 4. The euro area's net IIP liability declined from 2003 onwards, largely driven by portfolio investment transactions and other changes in securities issued by euro area residents. The net asset stock of direct investment, however, partially offsets the net liability position of the euro area.

As stated above, it is important to assess the components underlying an increase in external liabilities. Direct investment inflows usually reflect a lasting interest in an economy and have a direct positive impact on economic activities, in terms of productivity and employment. International capital flows in

⁴ Improved statistical coverage also contributed to the higher external debt levels.

the form of direct investment and equity are advantageous as they tend to represent long-term investments, and are thus likely to be less volatile. Increasing external liabilities arising from this type of investment are not usually problematic. Conversely, where the increased liabilities are driven by portfolio investment and banking flows, as was the case in the euro area, these tend to be more mobile and volatile via exchange rates and financial market price fluctuations. Furthermore, these types of investment are more easily retracted to the home market of the investor in times of financial crisis.

The sectoral composition of the euro areas external balance sheet for portfolio and other investment is presented in Chart 5. In the period prior to the international financial crisis, foreign capital inflows were largely driven by the banking and Government sectors. Since that time, Government net external liabilities have continued to increase steadily, reflecting the worsening fiscal situation for a number of euro area economies, particularly those "peripheral" countries.

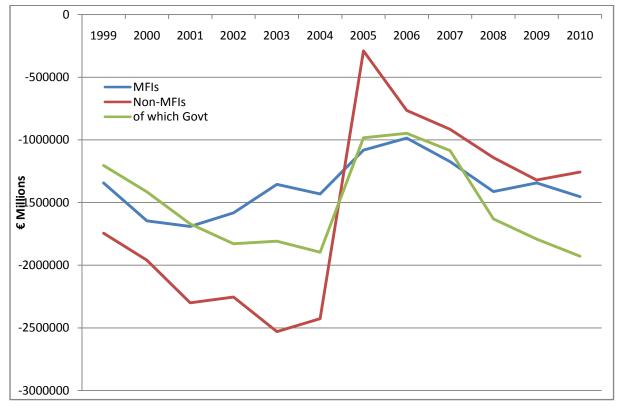
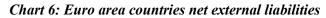
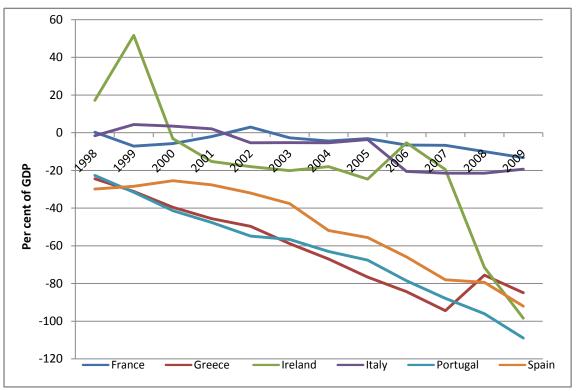


Chart 5: Sectoral composition of the euro areas external balance sheet

Note: These external positions refer to portfolio and other investment only.

Developments in the current account and the net external indebtedness of a number of euro-area countries are now examined in Chart 6. As would be expected the accumulation of current account deficits over a number of years resulted in net liability positions for the external balance sheets of the deficit countries, namely France, Greece, Italy, Ireland, Portugal and Spain.

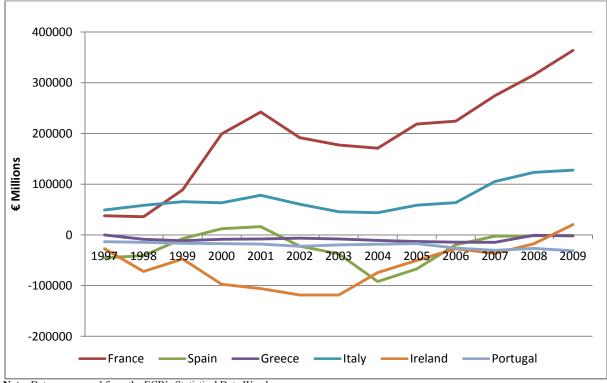




Note: Data are sourced from Eurostat

The net external liability position for these deficit countries is further analysed by functional category⁵ in Charts 7-9.

Chart 7: Euro area deficit countries' stock of net direct investment



Note: Data are sourced from the ECB's Statistical Data Warehouse

⁵ Derivatives and reserves are not included owing to lack of comprehensive data and irrelevance, respectively.

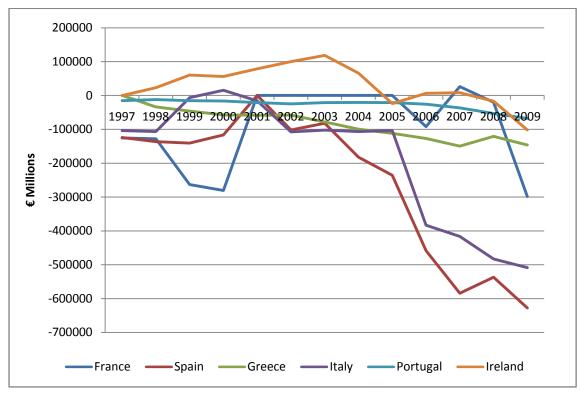


Chart 8: Euro area deficit countries' stock of net portfolio investment

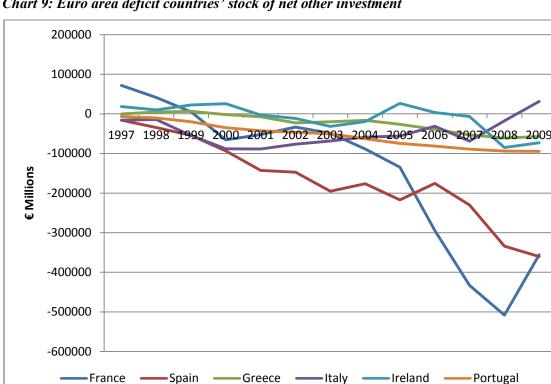
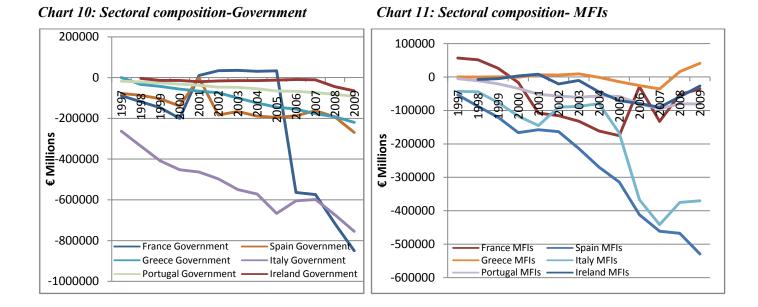


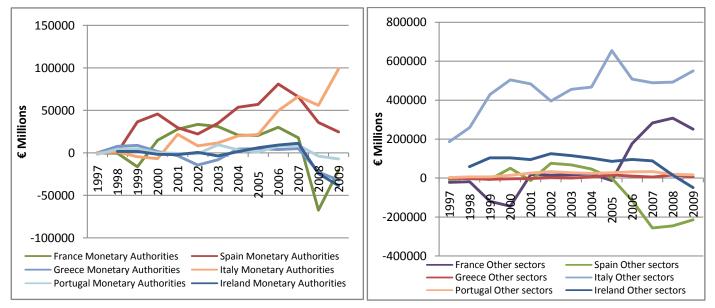
Chart 9: Euro area deficit countries' stock of net other investment

The increase in foreign obligations of euro area countries that experienced current account deficits over the last decade largely comprises debt and equity securities as well as foreign loans. The dependence of countries on foreign financing through relatively liquid instruments and debt instruments may indicate vulnerabilities, as it shows the susceptibility to changing foreign sentiment on the domestic economy.

The sectors driving the growth in the external imbalances for those deficit countries are presented in Charts 10-13⁶ below.







Growth in the external imbalances was driven by the banking and Government sectors for all deficit countries, except Greece who has had a small external net asset position for the banking sector since

⁶ Data are sourced from the ECB's Statistical Data Warehouse. Data refer to portfolio and other investment positions only.

2007. All deficit countries, with the exception of Spain, and more recently Ireland, have had external net asset positions for their private and non-banking sectors over time.

Sustainability

Persistent current account deficits and increasing external liabilities have meant that the sustainability of external debt in peripheral countries has become a significant consideration for international financial market participants in recent times. The question of whether externally funded debt is sustainable for sectors of the euro area peripheral economies is a current issue of concern.

Naturally, from both debtors' and creditors' perspectives, the sustainability of international investment is of key importance. From a debtors' perspective continued finance from international markets is important in order to address shortfalls in domestic savings and thereby fund domestic investment. The ability of the debtor nation to service their externally raised finance - in terms of both principal and income - is of concern from the creditors' perspective. Unsustainable levels of foreign investment can have an impact on domestic borrowers and their economies, as well as foreign creditors. In addition, projections of the responsiveness of investment to external or domestic shocks are crucial for maintaining productive investment in an economy.

The sustainability of capital inflows to countries depends on the ability of domestic borrowers to meet the payment obligations of external debt on an ongoing basis. To sustain a current account deficit and increasing stock of net external liabilities, therefore depends on the level of income earned from productive activities, exceeding payments due on foreign debt.

Persistent current account deficits, leading to accumulating financial obligations cannot continue indefinitely, as the payments required to service the debt would eventually outweigh the current income arising from GDP growth. Adopting the method employed by Bertaut et al (2008)⁷, the burden of a debtor nation in servicing its external debt can be measured using the ratio of net IIP to GDP (sustainability ratio). Box 1 below provides detailed information on the sustainability ratio.

⁷ Bertaut, C., B. Kamin, and C. Thomas (2008), "How Long Can the Unsustainable U.S. Current Account Deficit Be Sustained? Board of Governors of the Federal Reserve System, International Finance Discussion Papers, Number 935.

Box 1: Sustainability ratio

For the sustainability ratio to maintain stability over time, increases in the current account deficit must be offset by increase of a similar magnitude in GDP, i.e., increasing NIIP must not exceed GDP growth. Increasing ratios allowed to continue without any attempts to correct the underlying imbalances may lead investors to worry about the servicing of their foreign assets. For net external liabilities to remain sustainable, the proportionate growth in GDP must equal the proportionate accumulation of external debt.

The change in NIIP is $[(NIIP_t - NIIP_{t-1})/NIIP_{t-1}]$, and the change in GDP is $[(GDP_t - GDP_{t-1})/GDP_{t-1}]$. Following the assumption that the rate of return payable on a net liability IIP position cannot exceed growth in GDP, accordingly the growth rate of GDP equals the growth rate of NIIP, $[(NIIP_t - NIIP_{t-1})/NIIP_{t-1}] \approx [(GDP_t - GDP_{t-1})/GDP_{t-1}](1)$. Assuming negligible valuation effects – as in the long run it is assumed that the asset and liability effects would be similar – an increase in NIIP liabilities is the current account deficit, $NIIP_t - NIIP_{t-1} \approx CA_t(2)$. Substituting equation (2) into equation (1) produces: $[(CA_t)/NIIP_{t-1}] = [(GDP_t - GDP_{t-1})/GDP_{t-1}]$.

The rate of return, or net transfer payments, for the net liability IIP is equal to the rate of GDP growth, given the assumption that meeting payment obligations on external debt requires at least the similar growth in income as per GDP. For the ratio of (change) NIIP/GDP to remain stable, the proportionate rise in GDP growth/net transfer payments $[\Delta NIIP_t/\Delta GDP_t = NIIP_{t+1}/GDP_{t+1}]$ must equal the CA/GDP ratio divided by the NIIP/GDP ratio, $CA/GDP_{NIIP/GDP} = \Delta GDP$ (3).

Numerical example using Irish data:

In 2007, a current account deficit of $\notin 10.1$ billion, and GDP of 189.7 billion implies a deficit on the current account of 5.3% of GDP. NIIP was - $\notin 36.9$ billion, which is a NIIP/GDP ratio of -19.5%. Applying equation (3) to the 2007 data reveals a sustainability ratio of -27.4% which is far greater than GDP growth of 7.3% during that year. Consequently, an increase in a NIIP liability of 27% is not sustainable as a GDP growth rate of 7.3% is not sufficient to service the net interest payments on this level of external debt obligations.

This example refers to only one year, whereas sustainability ratios need to be calculated over a longer period of time to analyse trends.

Charts A1 to A6 in Annex A contain the growth in GDP compared with NIIP growth for each deficit country. Given the volume of increases in NIIP in over the past decade in excess of GDP growth, for Spain, Greece, Ireland and Portugal it is clear that the accumulation of external debt for these euro area countries was on an unsustainable path since these countries joined EMU.

The sustainability ratios, compared with GDP growth since 1999 are presented in Annex B. An increase in net IIP for the euro area of 8.7 per cent for example, compared with GDP growth of 2.7 per cent implies that net external debt growth is several multiplies of GDP growth. Rapid increases of net IIP in excess of GDP growth should pose as a warning signal for those policy makers monitoring these developments. These charts clearly show that the growth in external indebtedness was out of line with GDP growth and should have served as a warning signal. Unsustainability was particularly pronounced from 2004 onwards for most deficit countries.

Who funded whom?

The creditor countries funding the euro area deficit countries are presented in Annex C. These data relate to debt and equity foreign borrowings and investments at between 2003 and 2008. A common thread is evident in the geographic profile of investing countries, those euro area countries with current account surpluses are significant investors in their monetary union colleagues experiencing funding gaps. In addition, Ireland is a significant investor arising from its role as a host of an international investment services centre⁸. The most significant non-euro area investors are the UK and the US. This is not surprising given the trade and financial link between these two economies and the euro area. Monetary authorities, via their reserve asset portfolios, and international organisations are also significant investors.

Conclusions

While the euro area Member States have experienced and benefited from capital inflows from abroad, the volumes have increased since the establishment of the European Economic and Monetary union. Increased investments by Member States were unable to be met by domestic savings over the past decade, and recourse to foreign borrowing was sought. The constituents of these inflows predominantly comprised debt and equity and foreign loans as opposed to direct investment inflows which contribute to more stable economic growth and employment. This effect was most apparent for "peripheral" countries that are now receiving loans from the EU/IMF Programme.

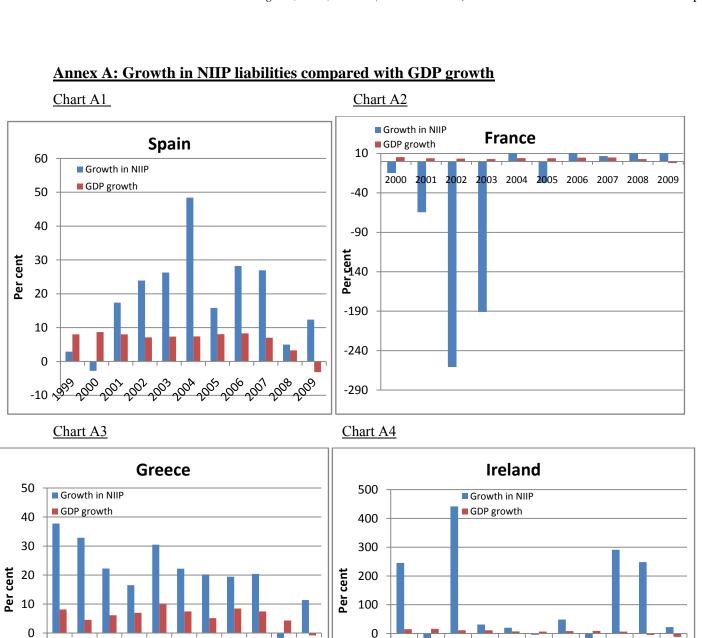
⁸ Furthermore, the data show that Ireland is a dominate holder of Portuguese equity securities, since 2006 in fact it holds 75% of all portfolio investment equity issued by Portugal as of end-2008. However, these volumes are skewed by securitisation activities, whereby a significant volume of Irish securitisation vehicles invest in SPVs in Portugal in order to facilitate investors demands for debt securities which are issued by the Irish SPV.

An analysis of the sustainability of the net external debt of these deficit countries since 1999 reveals that these externally driven imbalances were on unsustainable growth paths, particularly since the mid 2000s. Early indications of the development of imbalances were evident, although perhaps not seen as relevant owing the integrated structure that monetary union offers. An examination of the countries that bought the equity and debt securities sold by deficit countries to meet their funding gaps, suggests that their creditors mainly consist of other euro area countries. Capital inflows from outside of the euro area mainly comprise of the US and the UK, as well as monetary authorities and international organisations.

Per cent

-10

-20



2009

299 200 200 200 200 200 200 200 200 200

2007 2002

2003 2004

1999 1999

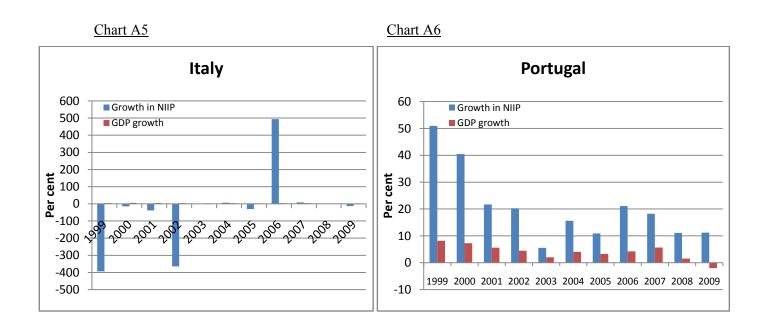
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-200

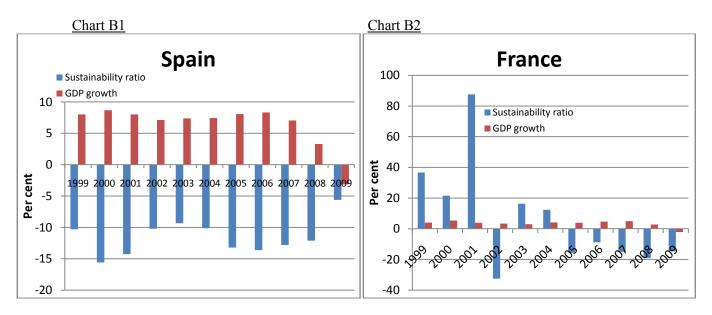
2005

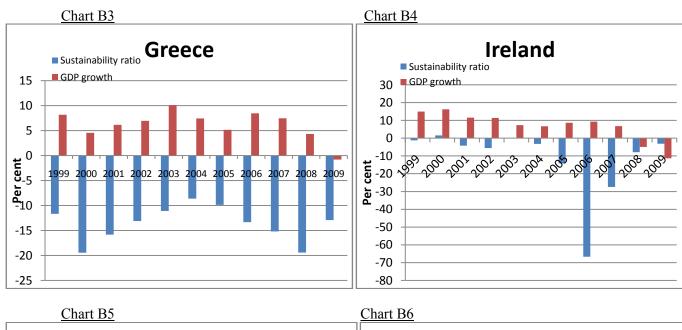
2000

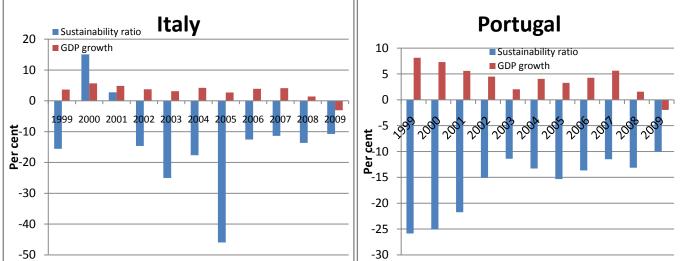
2001 2008 2009



Annex B: Sustainability ratios







Annex C

All data refer to end-2008 and are sourced from the IMF's Coordinated Survey of Portfolio Investment.

Table C.1. Foreign investors in French securities										
Per cent	2003	2004	2005	2006	2007	2008				
Austria	1.06	1.20	1.26	1.13	1.11	1.22				
Belgium	4.17	4.81	5.24	4.72	4.58	4.21				
Germany	9.37	10.00	9.35	10.48	10.33	10.38				
Ireland	4.56	4.92	4.27	4.11	4.90	4.26				
Italy	5.67	5.56	5.78	5.67	5.61	6.02				
Japan	6.93	7.97	7.83	6.58	6.06	6.61				
Luxembourg	9.14	8.97	10.02	10.19	10.43	10.81				
Netherlands	5.69	6.27	6.80	4.93	5.42	6.44				
Norway	0.83	1.07	1.00	1.24	1.56	1.61				
Spain	3.96	4.20	5.51	4.09	4.31	3.64				
Switzerland	3.38	3.55	3.29	2.94	3.16	3.73				
United Kingdom	9.13	9.61	4.59	9.34	7.31	6.61				
United States	14.07	13.65	16.78	18.36	18.41	13.72				
SEFER+SSIO (**)	13.67	9.92	9.67	7.50	7.10	12.08				
Total value of investment	100.00	100.00	100.00	100.00	100.00	100.00				

Table C.1: Foreign investors in French securities

Table C.2: Foreign investors in Greek securities

Per cent	2003	2004	2005	2006	2007	2008
Austria	4.48	3.84	3.71	3.65	3.83	3.04
Belgium	8.43	8.31	8.36	6.89	6.55	7.57
France	18.18	18.78	19.79	18.91	20.13	23.28
Germany	17.28	15.26	17.17	15.33	12.97	12.74
Ireland	3.70	4.12	5.47	4.93	4.00	5.64
Italy	7.54	6.80	8.28	6.80	7.21	8.90
Japan	3.10	2.35	2.57	2.85	3.23	2.97
Luxembourg	7.00	9.08	7.94	8.69	7.62	7.24
Netherlands	5.41	7.70	8.38	7.83	7.98	7.32
Norway	1.06	1.35	1.55	1.74	1.59	1.62
Portugal	0.35	0.52	0.66	1.07	1.41	1.96
United Kingdom	12.16	8.54	2.79	6.04	6.34	3.91
United States	4.15	4.03	5.09	6.36	8.22	3.36
SEFER+SSIO (**)	1.22	3.49	1.78	1.75	2.07	3.41
Total value of investment	100.00	100.00	100.00	100.00	100.00	100.00

Table C.3: Foreign investors in Irish securities										
Per cent	2003	2004	2005	2006	2007	2008				
Austria	1.39	1.67	1.71	1.61	1.61	1.61				
Belgium	2.21	2.45	2.02	2.39	3.27	3.91				
France	10.23	11.20	11.63	15.18	12.75	12.28				
Germany	12.01	13.74	11.83	11.53	11.83	14.72				
Italy	9.69	8.09	7.46	6.33	5.80	5.93				
Japan	9.65	7.02	5.60	3.97	4.16	4.20				
Luxembourg	7.10	6.38	5.84	6.17	6.70	7.10				
Netherlands	3.52	3.04	3.21	3.01	4.01	4.25				
Portugal	2.08	2.88	2.81	1.22	1.79	3.51				
Spain	2.52	3.01	2.83	2.79	2.61	2.60				
Switzerland	2.51	2.35	2.55	2.33	2.50	2.52				
United Kingdom	13.54	15.40	17.81	17.07	17.30	16.41				
United States	9.58	10.63	11.49	12.02	10.95	6.29				
SEFER+SSIO (**)	1.09	1.06	2.01	2.52	2.20	4.01				

Ta

Table C.4: Foreign investors in Italian securities

100.00

Total value of investment

Per cent	2003	2004	2005	2006	2007	2008
Austria	1.20	1.36	1.36	1.40	1.57	1.57
Belgium	6.20	6.33	6.28	4.66	4.04	4.91
France	18.48	19.32	19.64	19.26	19.05	20.94
Germany	11.15	12.67	12.89	13.34	13.86	13.36
Ireland	6.98	7.20	8.14	8.86	9.30	10.43
Japan	5.95	5.46	5.08	4.57	4.62	4.70
Luxembourg	10.94	10.78	10.07	11.20	12.28	10.13
Netherlands	5.18	5.68	6.92	6.66	6.49	6.21
Norway	0.91	0.88	1.13	1.44	1.38	1.74
Portugal	0.56	0.43	0.57	0.72	0.74	0.91
Spain	5.85	5.68	5.89	5.04	4.26	4.54
United Kingdom	11.58	9.72	8.73	8.62	7.39	7.49
United States	6.82	6.43	6.40	7.26	7.78	4.64
SEFER+SSIO (**)	3.51	3.56	2.78	2.78	2.46	4.63
Total value of investment	100.00	100.00	100.00	100.00	100.00	100.00

100.00

100.00

100.00

100.00

100.00

Table C.5: Foreign investors in Portuguese securities

Per cent	2003	2004	2005	2006	2007	2008
Austria	1.25	1.41	1.52	1.01	0.92	1.02
Belgium	6.08	6.52	6.21	4.87	4.99	5.27
France	24.85	26.48	25.52	20.71	20.23	22.88
Germany	15.99	14.94	15.01	13.94	12.79	13.74
Ireland	3.83	6.12	8.25	22.29	22.75	24.79
Italy	6.47	6.54	4.90	4.36	3.56	3.79
Japan	1.35	1.16	1.24	1.21	1.28	1.06
Luxembourg	6.34	7.41	6.99	6.53	6.37	5.03
Netherlands	3.08	2.99	4.76	3.21	3.99	3.53
Norway	0.86	0.62	1.09	1.64	1.77	1.63
Spain	4.99	3.55	3.67	4.50	5.07	5.03
United Kingdom	12.88	10.35	10.15	5.87	6.05	3.99

United States	4.92	4.92	4.39	3.63	3.69	1.57
SEFER+SSIO (**)	1.67	2.55	2.29	2.27	2.83	3.63
Total value of investment	100.00	100.00	100.00	100.00	100.00	100.00

Table C.6: Foreign investors in Spanish securities

Per cent	2003	2004	2005	2006	2007	2008
Austria	0.99	1.02	1.14	1.09	1.04	1.13
Belgium	3.85	3.33	2.96	2.96	3.36	3.62
France	22.62	20.53	21.04	18.61	18.60	20.58
Germany	16.37	17.71	17.50	19.75	19.80	19.52
Ireland	5.78	6.38	6.31	6.78	5.87	6.04
Italy	3.29	3.05	3.04	2.98	2.66	2.87
Japan	4.55	3.57	3.63	2.99	2.47	2.18
Luxembourg	7.02	8.81	9.37	8.75	8.71	7.06
Netherlands	5.58	6.22	6.40	5.60	5.91	5.63
Norway	1.63	1.41	1.34	1.76	2.37	2.67
Portugal	1.10	1.18	1.40	1.45	1.45	1.43
United Kingdom	7.07	7.81	9.49	9.29	7.39	7.45
United States	10.77	10.15	8.76	9.92	10.80	8.19
SEFER+SSIO (**)	2.61	2.66	2.18	2.88	3.97	6.89
Total value of investment	100.00	100.00	100.00	100.00	100.00	100.00