Portuguese economy: Statistical analysis on the current account reversal´s sustainability[1]

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Portuguese economy: Statistical analysis on the current account reversal´s sustainability

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Abstract

In the past, Portugal exhibited persistent deficits on the current and capital account. In 2012, this situation reverted and a surplus in the current and capital account has been registered since 2012. The aim of this paper is to explore external statistics as a key source to evaluate country´s economic performance. External macroeconomic imbalances have to be analysed beyond traditional current and capital account. In particular, real economy cannot be disregarded from financial flows and positions. The richness of statistical data availability constitute a relevant tool to monitor economies performance and support economic decision makers.

Keywords: macroeconomic imbalances, current and capital account, financial account, international investment position, VAR model.

JEL classification: E66, O52.

Contents

1. Introduction

Balance of payments measures external transactions occurred between residents and non-residents in one economy, in a specific period of time. It is composed by two main categories that should be balanced on a regular basis - current and capital account and financial account[2] (Figure 1). Current account deals with real and short – term external transactions (international trade - goods and services - and income - primary and secondary), while capital account records physical assets, in/ out flows of capital that brings a change in a country´s foreign assets and liabilities. Financial account includes financial assets and liabilities external transactions.

Figure 1 | *Balance of payments composition*
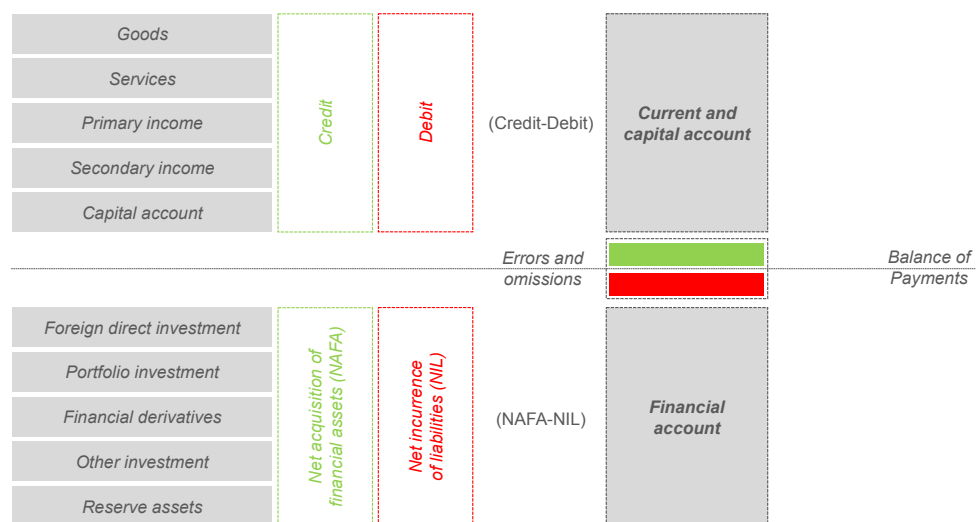
An economy that exhibits a deficit/ surplus in the current and capital account is considered as a net debtor/ creditor to the rest of the world with positive/ negative external inflows, meaning that its external net incurrence of liabilities is higher/ lower than its external net acquisition of net financial assets.

Until 2012 Portugal was a net external debtor. Graph 1 shows the Portuguese current and capital account and its main components. Services, secondary income (where migrants' remittances are included) and capital account contribute positively to the balance of current and capital account, while goods and primary income (income earned from production, capital and labour factors) contribute negatively.

Current and capital account cannot be however disregarded from its financial flows. In the Portuguese case, primary income for example, is mainly determined by investment income which is linked with the international investment position performance.

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[2]   Current and capital account is not always equal to the financial account due to some statistical imperfections, lack of information, leads and lags measured by *errors and omissions*.

Graph 1 | *Portuguese current and capital account by component, in MEUR*
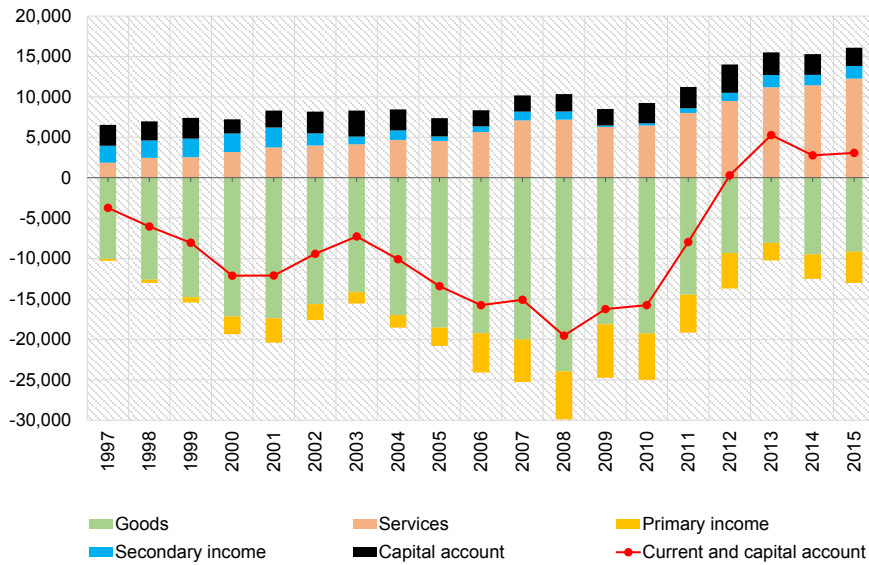
[Source: Banco de Portugal]

The analysis of the current and capital account has to be complemented with financial transactions and the corresponding outstanding amounts. Financial transactions are one important component of the external stock amounts since the increase/ decrease of net financial assets will increase/ decrease the net international investment position. However, the change of the net international investment position is affected also by the existence of other flows; namely, price and exchange rate changes - earnings/ losses due to price (de)valuations/ exchange rates fluctuations - and other changes, which is a residual component expressing, for example, extinguished assets/ liabilities and statistical reclassifications (Figure2).

Figure 2 | *International investment position decomposition*

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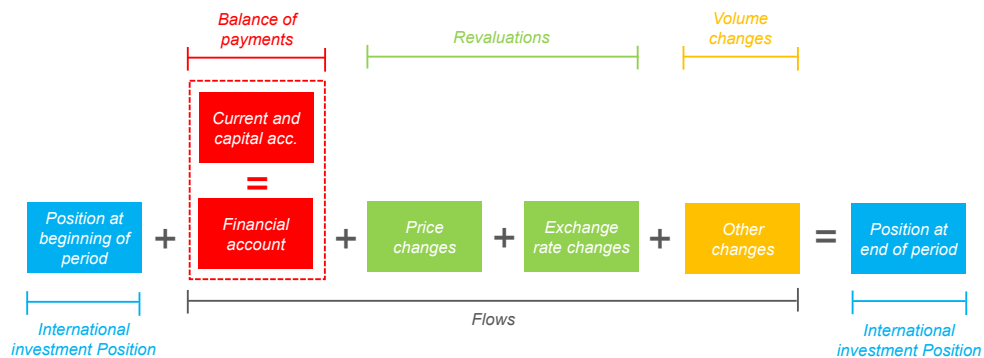
The ratio of the net international investment position to Gross Domestic Product (GDP) is commonly used to gauge the creditworthiness of a country. As stated by the European Comission: '*The more negative the net international investement position to Gross Domestic Product, the more country becomes vulnerable to volatility in international financial markets. Many countries that accumulated a large negative net outstanding amounts in the run-up to the crisis lost access to financial markets when the crisis struck and needed to accept international financial assistance to cover the deficit in their budgets*'. Therefore, it is a good statistical indicator to evaluate the risks to financial stability.

Portuguese current and capital account and the net international investment position are shown in Graph 2. For the time span considered, there is, in general, a positive relation between the two variables. However, for some years, there is a negative relation meaning that other flows than transactions explain the change in the stock amount and therefore cannot be disregarded. In 2012, for example, the current and capital account which stood at 0,2% of Gross Domestic Product (+4,7 p.p. when compared to 2011), the international investment position record -117% of GDP (-15,9 p.p.).

Graph 2 | *Portuguese current and capital account and international investment position, in % of GDP*
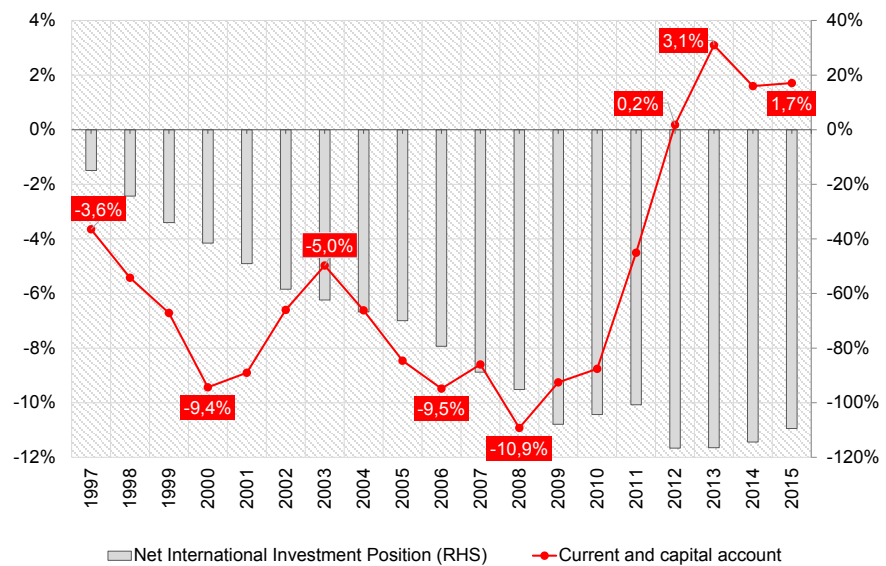
[Source: Banco de Portugal]

This paper does not aim to address any conclusion on the Portuguese recent current and capital account reversal sustainability. Instead, it takes Portugal as a case-study to demonstrate that the full understanding of one economy competitiveness cannot be dissociated from financial flows and positions and other macroeconomic statistics.

Currently, there exists a wide range of statistical data available which can provide a very important information to support decision makers and that can be used to monitor economies aiming to predict economic crises, for example.

Based on a statistical perspective and descriptive analysis, this paper focuses both on the level and composition of Portuguese debits/ liabilities *vis-à-vis* the rest of the world. Strengths and weaknesses are explored.

This paper comprises six sections. After the introduction in section 1, section 2 conducts a brief literature survey. Section 3 detail some external linkages between Portugal and other economies. Section 4 searches possible external risks and vulnerabilities of the Portuguese economy. Section 5 states some final considerations.

2. Literature survey

In 1817 David Ricardo supported that there are many economic benefits from international trade. External openness improves economic welfare if comparative advantages are explored. However, benefits can be offset if external economies connections are not wisely managed and understood.

International trade is the most relevant component of the Portuguese current and capital account. Its determinants are highly discussed in the literature. It is argued that current account is determined by both structural medium-term (more permanent) components and cyclical (transitory) determinants. Ca'Zorzi, Chudik and Dieppe (2012) use inter-temporal optimization to conduct a stock taking exercise on these relations. These authors argue that structural determinants are linked with gap between domestic savings and investment, demographic factors (for example, dependency ratio), trade imbalances, external competitiveness and dependency on production factors like energy. Although there are cyclical elements as business cycles that influence also the current account.

However, due to the complexity of the current and capital account, other macroeconomic indicators need also to be used to explain its evolution. Brimissis (2010) assumes that *'a higher fiscal deficit (...) decreases private saving (...) under the Keynesian model (...) supports the twin-deficit hypothesis (...) fiscal deficits usually be accompanied by wider current account deficits'*.

On the linkages between current and capital account and financial account, Obstfeld (2012) supports that external exposure cannot be dissociated to the financial account, because international crisis are the product of severe liquidity constraints: *'while policymakers must continue to monitor global current accounts (...) large gross financial flows entail potential stability risks that may be only distantly related'*. Accordingly, available literature suggests joint assessment of current and capital and financial accounts imbalances.

The sign and magnitude of the current account is also commonly discussed. Ghosh and Ramakrishnan (2012) state that *'whether a deficit is good or bad depends on the factors giving rise to that deficit'*. For instance, current account deficit can be used to mitigate external shocks, particularly when initial level of deficit is not excessive. External exposure soundness depends (*inter alia*) on risk minimization (portfolio diversification and solvency binomial).

On the current account reversals Ghosh and Ramakrishnan (2012) said that *'several economies during the recent global crisis (...) Such reversals can be highly disruptive because private consumption, investment, and government expenditure must be curtailed abruptly when foreign financing is no longer available (...)'*.

In this concern, current account reversals have to be monitored. Financial statistics and other economic indicators can provide an insight on the strengths and weaknesses of the reversals.

3. New financial landscape: The Portuguese case and international comparison

External linkages between Portugal and other economies

In 2015, the degree of openness - measured as the sum of exports and imports over nominal GDP - of the Portuguese economy was levelled at approximately 80%. When compared with the other European Union countries, Portugal stood in the 28th position. According to Eurostat data, other vulnerable economies were aligned with Portugal - Italy (29th), Greece (26th) and Spain (24th), with the exception to Ireland which ranked third more opened economy of the European Union.

The Portuguese external deficit between 1997 and 2011 reflected low external economic competitiveness. After 2012 Portugal becomes an external net lender. It is worth mentioning that this situation is followed by the recent world economic and financial crisis.

The Portuguese (PT) current and capital account reversal was not an exception when compared with other European countries (Graph 3). The majority of these countries evidenced current and capital deficits in 2011 and were external net lenders in 2015.

Graph 3 | *European countries current and capital account balances, in % of GDP (2011 and 2015)*
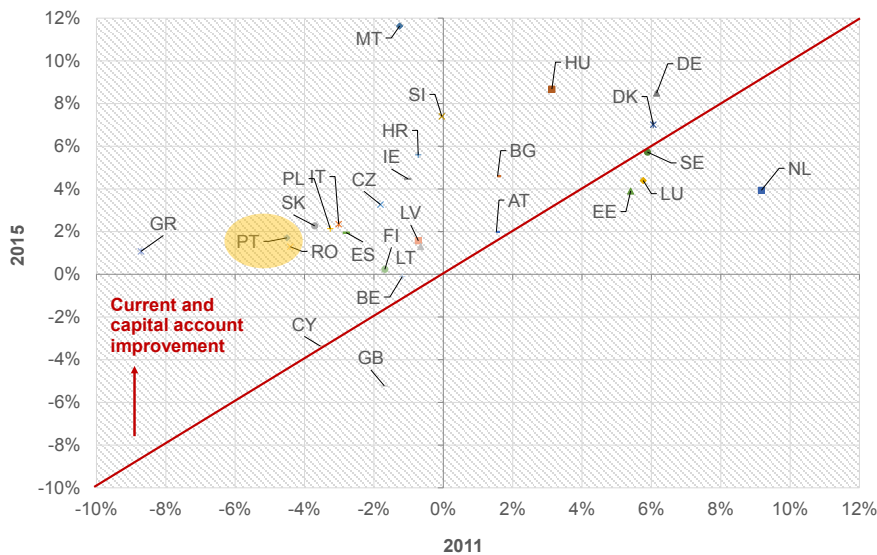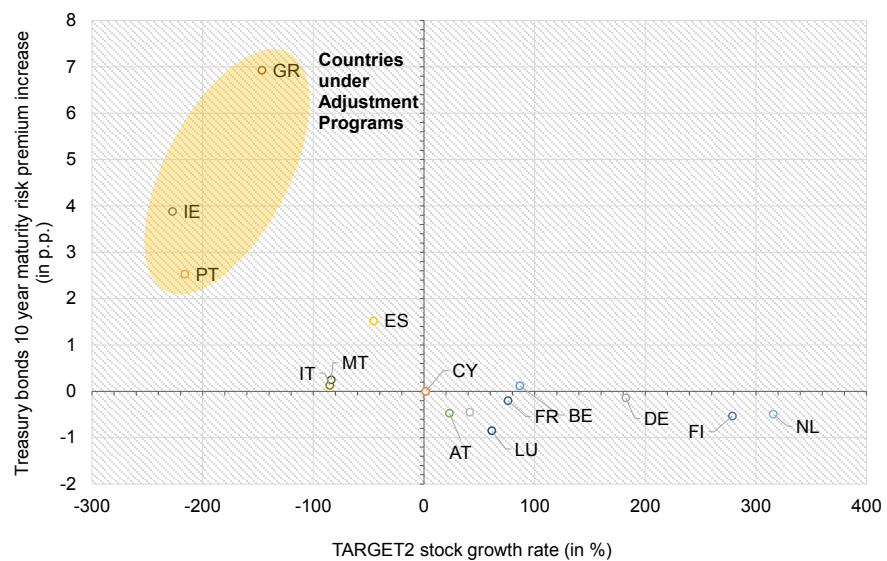

[Source: Eurostat]

Euro-Area vulnerable economies liquidity constraints were attenuated by the accommodative policy led by ECB which reflected in the Trans-European Automated Real-time Gross settlement European Transfer system (TARGET2). Tressel (2014) argued that '*overall support provided by the Eurosystem to banks or sovereigns of various Euro-Area countries is reflected in the TARGET2 balances*'.

According to Sinn and Wollmershäuser (2011) '*Greece and Portugal financed their current account deficits in 2008 to 2010 through TARGET2*' suggesting that TARGET2 can predict external financing problems.

Graph 4 compares for a sample of selected Euro-Area countries, TARGET2 growth rate and 10 year Treasury bonds interest rate (risk premium) developments. According to this graphic, between 2008 and 2010, the accommodative policy led by ECB which reflected in TARGET 2 financed vulnerable Euro-Area economies as Portugal and Greece. For the particular case of Germany, Cecchetti et. al. (2012) argued that '*since the beginning of the financial crisis in August 2007, claims of the Deutsche Bundesbank on the Eurosystem through the TARGET2 system have gone from basically zero to more than €700 billion*'. At the same time, international markets were already penalizing public debt issues - Treasury bonds risk premium increased, due to macroeconomic imbalances, in vulnerable economies.

Graph 4 | *TARGET2 stocks variation and Treasury bonds risk premium*

(2008 − 2010)


[Source: European Central Bank]

Portuguese current account and financial account

In Portugal, at the same time that current account increased, internal demand via investment (Graph 5) decreased.

According to the European Commission article '*The cyclical component of current-account balances*', '*The rebalancing of trade (and thus current-account) balances in the vulnerable countries is reflected in domestic demand declining faster than output*'. This situation can be observed in Portugal. After 2010 there was a decline of private investment; private consumption has generally declined more than GDP and contributed to raising saving rates.

The European Commission article states that: '*The countercyclical increases in fiscal deficits initially slowed the narrowing of current-account deficits in a number of vulnerable countries, but fiscal consolidation has contributed to improving their current-account balances since 2009-10*'.

Graph 5 | *Portuguese Gross domestic product and internal demand, in 1,000 MEUR*
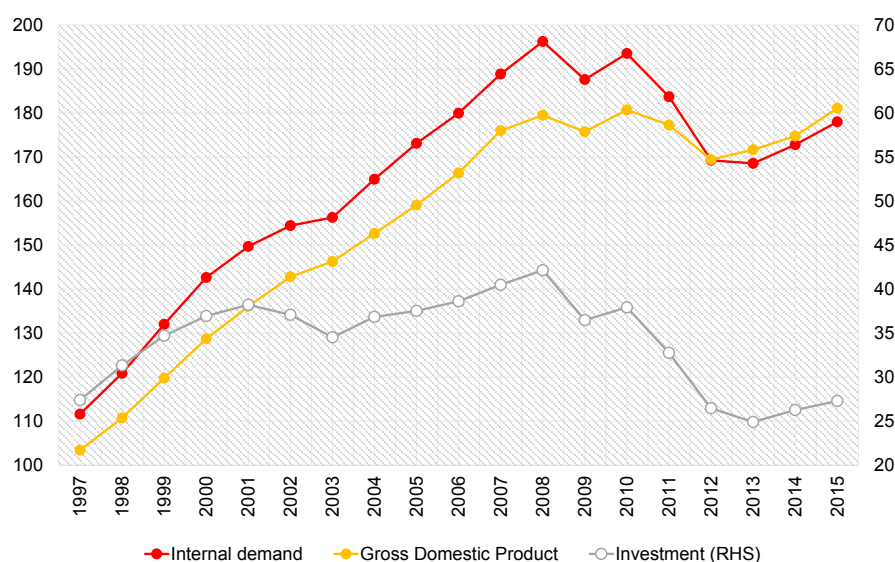
[Source: Eurostat]

Current and capital account recent reversal is attributable to a combined increase in the services account surplus and an improvement in the goods account deficit.

Financial account, the mirror of the current and capital account - captures financial transactions which correspond in many circumstances to exports/ imports and/ or primary/ secondary income of the economy. However, there are transactions that may have impact in the same account.

On the financial side, different patterns can be referred before and after the world economic and financial crisis. Graph 6 displays the relation between current and

capital account and financial account (broken down by functional category). According to this evolution four different phases can be inferred:

1. Between [1997-2007] Portuguese current and capital account accumulated deficits. On the financial account, Portugal was mainly financed by external loans (other investment functional category);

2. Between [2007-2010] there is also an accumulation of the current and capital deficits. In this period, Portuguese external financing was mainly obtained under portfolio investment - issuance of debt securities and equity by corporations (financial and non-financial) and general government. Portfolio investment is considered a more volatile investment than foreign direct investment;

3. Between [2010-2014], under the recent Bailout Programme (Economic and Financial Assistance Programme), a reversal of the current and capital account is observed. Financial transactions were compensated within financial account and not in the current account. Portugal obtained external loans from the European Commission, European Central Bank and International Monetary Fund (IMF) (with a negative impact on other investment balance) and in the meantime there are long term debt securities amortizations with a positive impact on the net portfolio investment. Reserve assets[3] also increased after the Bailout programme. Net foreign direct investment shows also during this period a negative performance associated with intra-group inflows in the form of loans to suppress internal liquidity constraints; and,

4. After 2014 there is an increase of the issuance of general government debt securities in the international markets - with a negative impact on the net portfolio investment. At the same time, there were European Union-IMF loan redemptions (other investment exhibited a positive sign). Direct investment decreased induced by some non-resident companies that controlled/ had significant degree of influence on the management on domestic firms.

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[3]   External assets controlled by monetary authorities and readily available to be used (high degree of liquidity).

Graph 6 | *Portuguese balance of payments (12 month accumulated flows), in MEUR*
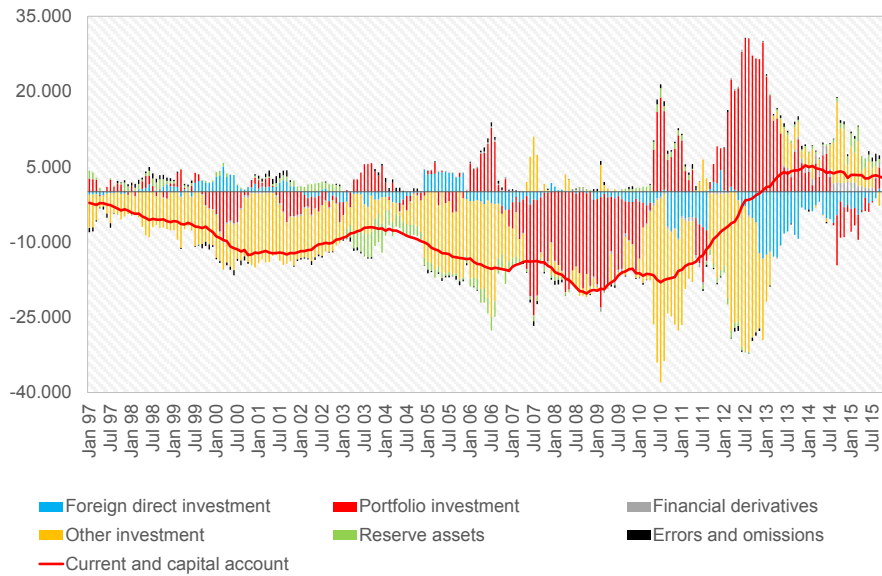
[Source: Banco de Portugal]

International investment position performance

The new financial landscape brought also some changes in the net international investment position performance and composition.

Between 1997 and 2015, the Portuguese net international investment position was negative (-109% of the GDP in 2015), which reflects a potential risk to financial stability. According to the European Commission countries with largest negative net international investment positions manage to reduce their large current account deficits or even shifted to external surpluses, which are sufficient to stabilise and slowly reduce their net external indebtedness over the medium term.

However, a mere stabilisation of external indebtedness may not be enough to restore full confidence, in particular for countries where the large negative net international investment positions essentially reflect level of debt (as opposed to countries where large negative amounts is driven by significant inflows of foreign direct investment).

In Portugal, recent positive current and capital account developments have contributed positively to the increase of the Portuguese external wealth. Nonetheless, there are other flows which influence international investment position and external sustainability that cannot be disregarded.

Graph 7 depicts Portuguese net international investment position between 1997 and 2015, broken down by transactions, revaluations (exchange rate and price changes), and other flows. Until 2009, financial transactions were the most important contributor to the international investment position. After the financial crises, in 2009 (with a 'new financial landscape') the net international investment position was determined by revaluations and other changes in volume. Before 2009, financial transactions were the main driver.

Price changes (a small component of the international investment position until 2008) increased after 2008 and was the main contributor between 2012 and 2013. Price changes show the valuation of Treasury bonds issued by general government held by non-residents, associated to the risk increase of the Portuguese economy. Non-financial corporation sector was also responsible to the price changes under the Portuguese stock exchange index (PSI 20). On the monetary financial institutions rather than central bank Banco de Portugal reported that '*both the return on equity and the return on assets improved considerably in 2015 (...) positive development in profitability was mainly driven by a significant reduction in the flow of impairments*'.

Other changes which measure, for instance, write-offs played also an important role in the net international investment position between 2012 and 2014.

Finally, recent evolution of the net international investment position as a percentage of GDP, benefits from a denominator effect (especially in 2014 and 2015); GDP increase (around 2% and 3%, respectively), after a sharp decrease in 2012 (nearly 4%).

Graph 7 | *Portuguese international investment position by type of flow, in % of GDP*
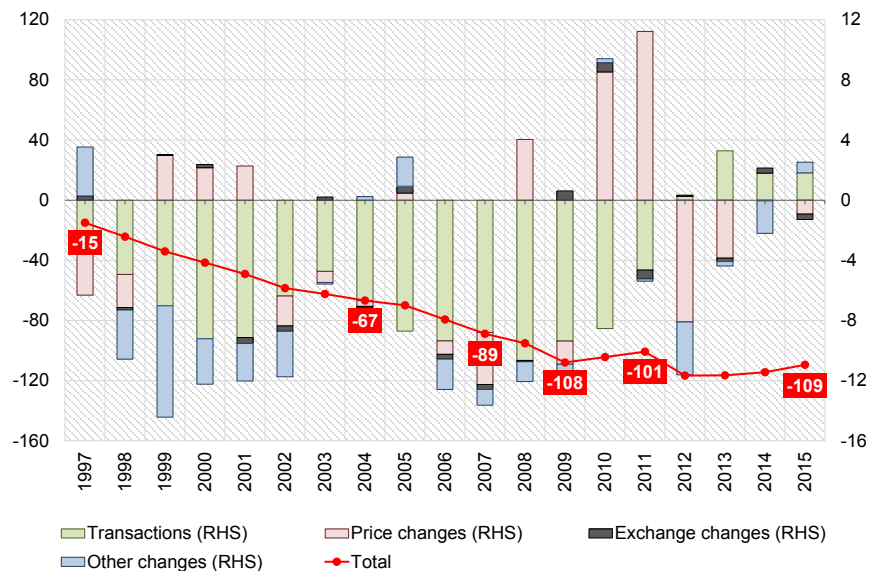
[Source: Banco de Portugal]

When compared to other vulnerable economies, Portugal has a similar net international investment position performance to Greece and Spain (in 2015, -126% of GDP and -90% of GDP, respectively). Italian net international investment position accounted for -27% of GDP (the better performance among the European vulnerable economies). Ireland registered its worst amount in 2012 (-130% of GDP), recovering to -70% of GDP in just 3 years (2015).

In the context of the three European economies with recent Bailout Programs – Greece, Ireland and Portugal – Portugal is the only country that exhibits a negative change in the net foreign direct investment position.

Excluding equity and financial derivatives from the international investment position, Portuguese net external debt chiefs 102% of GDP in 2015; which is the highest value (virtually equal to 2012) since 1997.

Current account and financial components linkages: an empirical analysis

The causality between current and capital account and financial account is highly discussed in the literature. Ersoy (2011) conducted causality tests for Turkey in order to understand the relationship between these 2 variables: '*Granger causality that runs from financial inflows to current account deficits (..) investigation suggest that the current account sustainability may be provided via better management of financial account*'.

In order to conduct an empirical analysis on the causalities and impacts of financial components into the current and capital account, a vector autoregressive model (VAR) was conducted. These models, became popular by Sims (1980) who provided a flexible framework to analyse the linkages and impacts among different financial/non-financial variables.

In general – Pfaff et. al. - a VAR is a process constituted by K endogenous variables $y_t = (y_{1t},...,y_{kt},...,y_{Kt})$:

$$y_t = A_1 y_{t-a} + ... + A_p y_{t-p} + u_t$$

Where A_i are coefficient matrices KxK for $i = 1,...,p$ and u_t is a K dimension white noise process.

In this respect, VAR models capture linear interdependencies between different time series. By exploring causality between different variables, these models allow to explore impact of shocks in explanatory variables in the dependent variables (impulse response functions).

Quarterly data was considered from 2001Q4 to 2015Q4 covering the following variables: the change rate of current and capital account seasonal adjusted in percentage of GDP; change rate of trade openness, sum of exports and imports as a percentage of GDP; change rate of net portfolio investment as a percentage of GDP; Portuguese stock exchange index variation (PSI 20); exchange rate measured in euro *vis-à-vis* US dollars, change rate of net other investment as a percentage of GDP. GDP used is seasonal adjusted.

In methodological terms, stationarity tests were run. Augmented Dickey-Fuller tests were considered for trend and intercept, intercept and none, and the conclusion is that variables have different degrees of integration (no cointegration). Non-stationary time series were transformed.

VAR lag length was chosen taking into account standard information criteria information. Quality tests and stability –inverse roots of AR characteristic polynomial, residual autocorrelation, for example – was analysed.
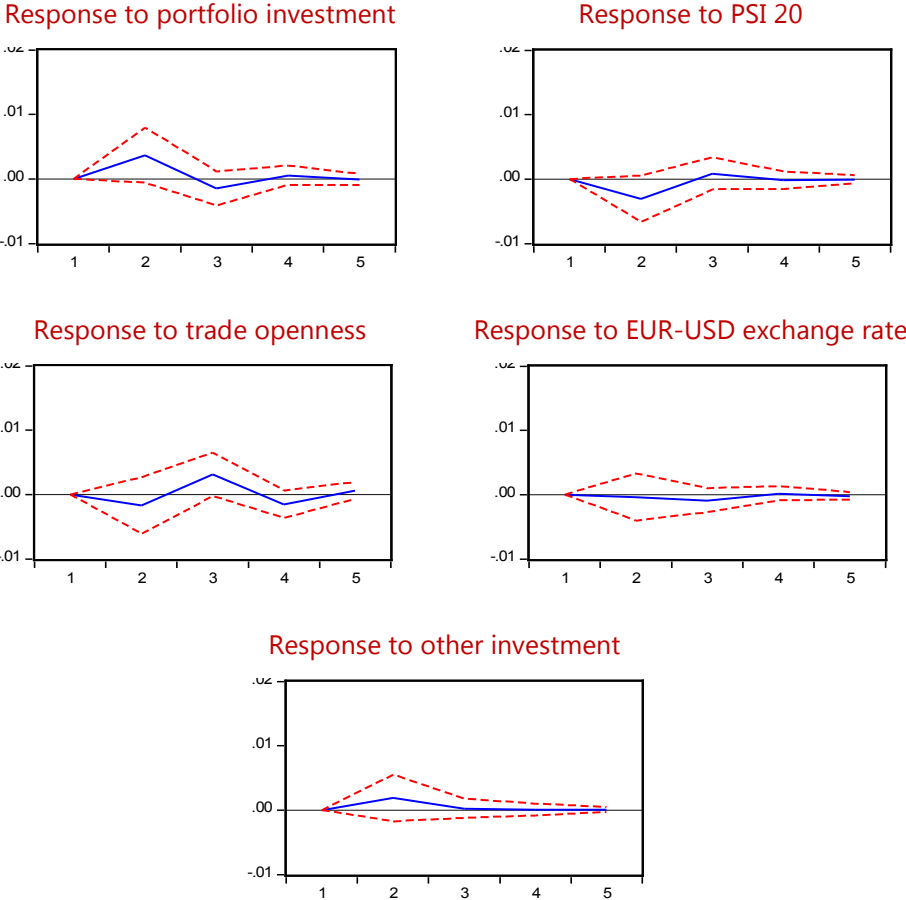
VAR Block Exogeneity tests suggest that the chosen independent variables jointly explain current and capital account variation. More particularly, trade openness, portfolio investment and the Portuguese stock exchange individually Granger cause the current and capital account variation. It is also worth mentioning that bidirectional causality was also found.

Non-accumulated 5 period impulse response functions are shown in Figure 4; mixed results among the variables considered. The two main lessons: i) there is statistical evidence of a link between the financial and current and capital account time series; and, ii) financial account components have a direct impact on the current and capital account.

Figure 3 shows a positive impact of the net other investment in the current and capital account and an accumulated positive impact of the net portfolio investment. Trade openness, have mixed effects but also positive accumulated effects on the current and capital account. Exchange rate has a negative impact since imports becomes less expensive and exports get more expensive, so there is a negative impact on international trade. Portuguese companies index have negative almost null effects.

The results obtained are consistent with the joint analysis of the balance of payments/ international investment position, since financial transactions are linked with investment income and also can reflect the capacity of the economy to be a net creditor of the rest of the world. When there is an investment abroad (or positive net acquisition of financial assets) it means that the economy has the ability to be a net creditor of the rest of the world. It will have also a positive impact on the investment income meaning that the economy will receive more credits from those investments.

Figure 3 | *Portugal: non-cumulative impulse response functions of the current and capital account variation*

Response to portfolio investment

Response to PSI 20

Response to trade openness

Response to EUR-USD exchange rate

Response to other investment

4. Looking beyond traditional components

There are several indicators that have to be taken into account when analysing a country's risk exposures and vulnerabilities both on current account transactions and on financial flows.

The degree of a country diversification of exports/ imports is important to address risk exposures to international trade. In Portugal, international trade of goods and services plays the most relevant role in the current and capital account.

By counterpart country of destination, both Portuguese exports and imports are highly concentrated (Figure 4) on a restricted number of countries. In 2015, approximately 75% of the Portuguese exports and imports were mainly attributable to ten markets of destination. Spanish economy alone contributes with 20% and 31% for exports/ imports, respectively. It is also visible that international trade is mainly attributable to the European economy.

Between 1997 and 2015, Herfindahl-Hirschman Index reveals an increase of the exports geographical diversification, while imports suffered from the opposite phenomenon. It is important to state that the increase in exports diversification occurred after the world economic and financial crisis. Since 2008, Portuguese exports weight to non-European Union countries increased by 4,1 p.p. (United States increased by 1,2 p.p. and China by 0,9 p.p.). With the exception to Greece, this result can be also extended to other European economies. On the contrary, imports driven by non-European Union countries decreased by 1,7 p.p. (however, United States and China increased by 0,3 p.p. and 0,6 p.p., respectively).

Figure 4 | *Portuguese international trade by geographical breakdown (2015)*

Exports weight
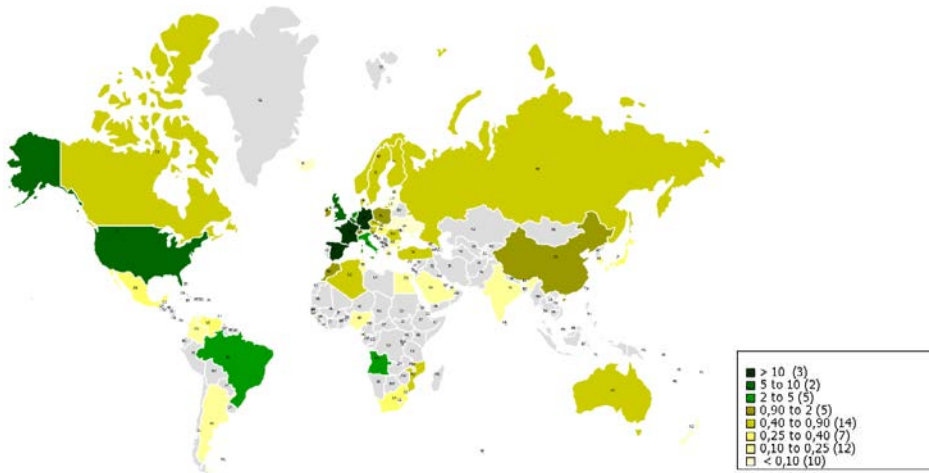
Imports weight
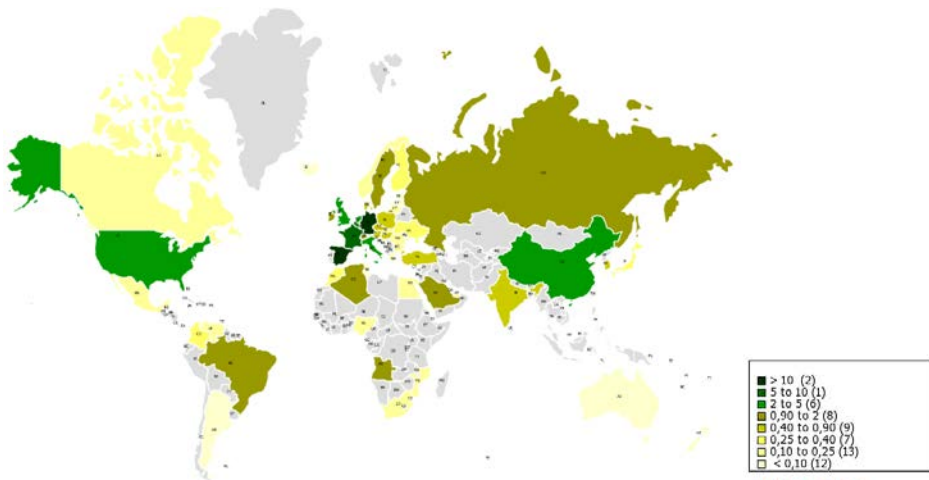
[Source: Banco de Portugal]

Standard International Trade Classification (SITC) is used to get an insight by type of product. In 2015, 13% of the Portuguese imports were related to mineral fuels, lubricants and related materials. At least in the short-run, energy is not substitutable therefore, there is a higher energetic dependency. Graph 8 shows that the weight of mineral fuels, lubricants and related materials is highly determined by oil price developments in international markets (correlation of 98%).

An inter-linked risk is associated to the fact that energy price changes are, most of the times, included in the price of exports (decrease of Portuguese manufacturers' margins). Imported energy price increases is associated to a Portuguese decrease in external competitiveness.

Graph 8 | *Weight of mineral fuels, lubricants and related materials on Portuguese total imports and oil prices*
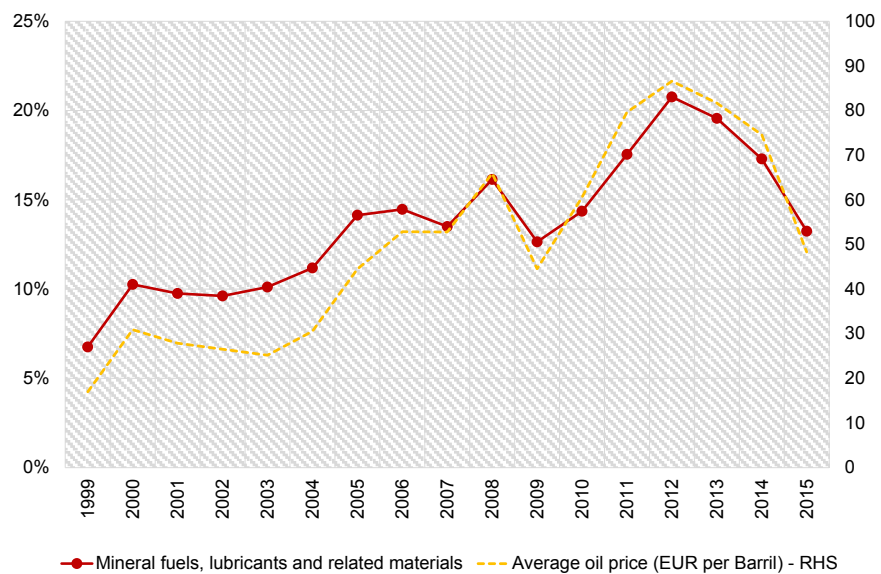

[Source: Banco de Portugal, Eurostat]

On the financial side, the Solvency Ratio of External Debt (SRED)[4] indicator, developed by Ucal and Oksay (2012), is applied for Portugal, Greece, Italy and Germany (Graph 9).

German economy exhibits a greater capability of repayment of debt when compared to Portugal, Greece and Italy (SRED greater than 1 for the entire period - 2008 to 2015). Although Portugal exhibits a favorable evolution on its external solvency situation in this period; after 2012, SRED slightly decreased, in contrast to the other vulnerable economies.

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[4] Measured by the current and capital account as a percentage of interest and principal payments.

Graph 9 | *Solvency Ratio of External Debt (SRED)**
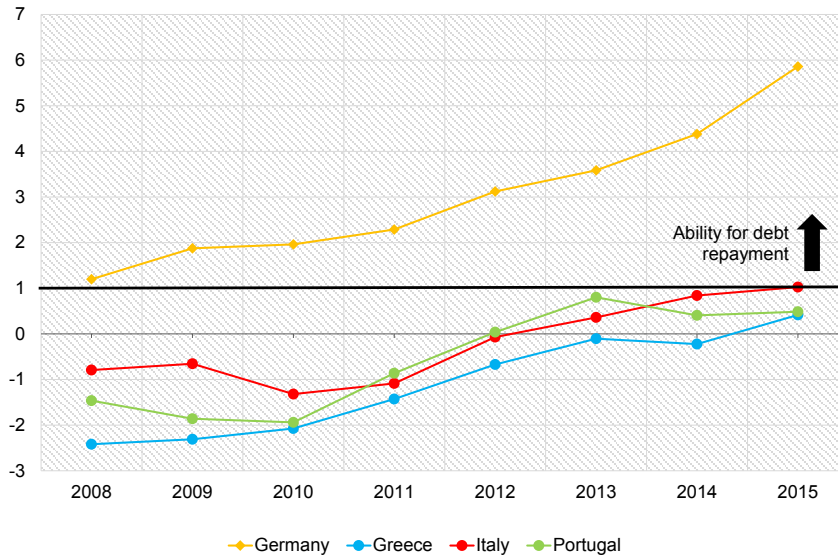
[Source: Eurostat]

[Legend: According to Ucal and Oksay (2012), '*SRED value close to 1 means that repayment ability increases while a value of 1 or greater denotes increasing debt servicing ability whereas a value of less than 1 indicates that hard currency shortage is approaching*']

*for some minor components there is no available information.

Other alternative measure for liquidity is the liabilities coverage – measured as the total liabilities over total assets. In 2012, this ratio stood at 162%; however, in 2015 total responsibilities *vis-à-vis* non-resident entities was virtually unchanged at 1.6 times greater than total assets. If data were publicly available, the level of risk associated to this level of indebtedness could be analyzed taking into account maturity mismatch – which aims to analyze if different obligations can be met with the available assets (treasury and liquidity management).

5. Final remarks

External statistics are an important source of information to evaluate competitiveness of one economy. The underlying macroeconomic aggregates enable to understand the external financing exposure, while permitting to address, together with other relevant statistics, its sustainability and potential vulnerabilities.

To address external sustainability issue, it is important to analyze current and capital account performance/ international trade markets (diversification of international markets, dependence on the imports ...). However, current and capital account *per se* do not fully explain the ability of a country to be an external creditor of the rest of the world and its capability to repay liabilities.

Balance of payments (financial account), international investment position and external data are the corollary of operations with different natures that reflect real economy and financial positions and flows. In this respect, economic opportunities and weaknesses cannot be dissociated of all this implications, especially in a globalized world that increasingly relies on complex international financial transactions.

Statistical data is provided with a very detailed information. If correctly understood (impacts, methodology and linkages) it could perform economic predictions and anticipate economic crises. As mentioned above, in the case of Portugal the new financial landscape after the financial crises had some important statistical implications on the international investment position (and external debt) main components. In this concern, the external sustainability of the current account cannot disregarded financial components.

Although economic and financial crises are difficult to predict, statistical information can assess to monitor economies and support economic decision makers.

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Bank of Portugal

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[1] This presentation was prepared for the meeting. The views expressed are those of the authors and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.

Portuguese economy: Statistical analysis on the current account reversal's sustainability

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BANK FOR INTERNATIONAL SETTLEMENTS
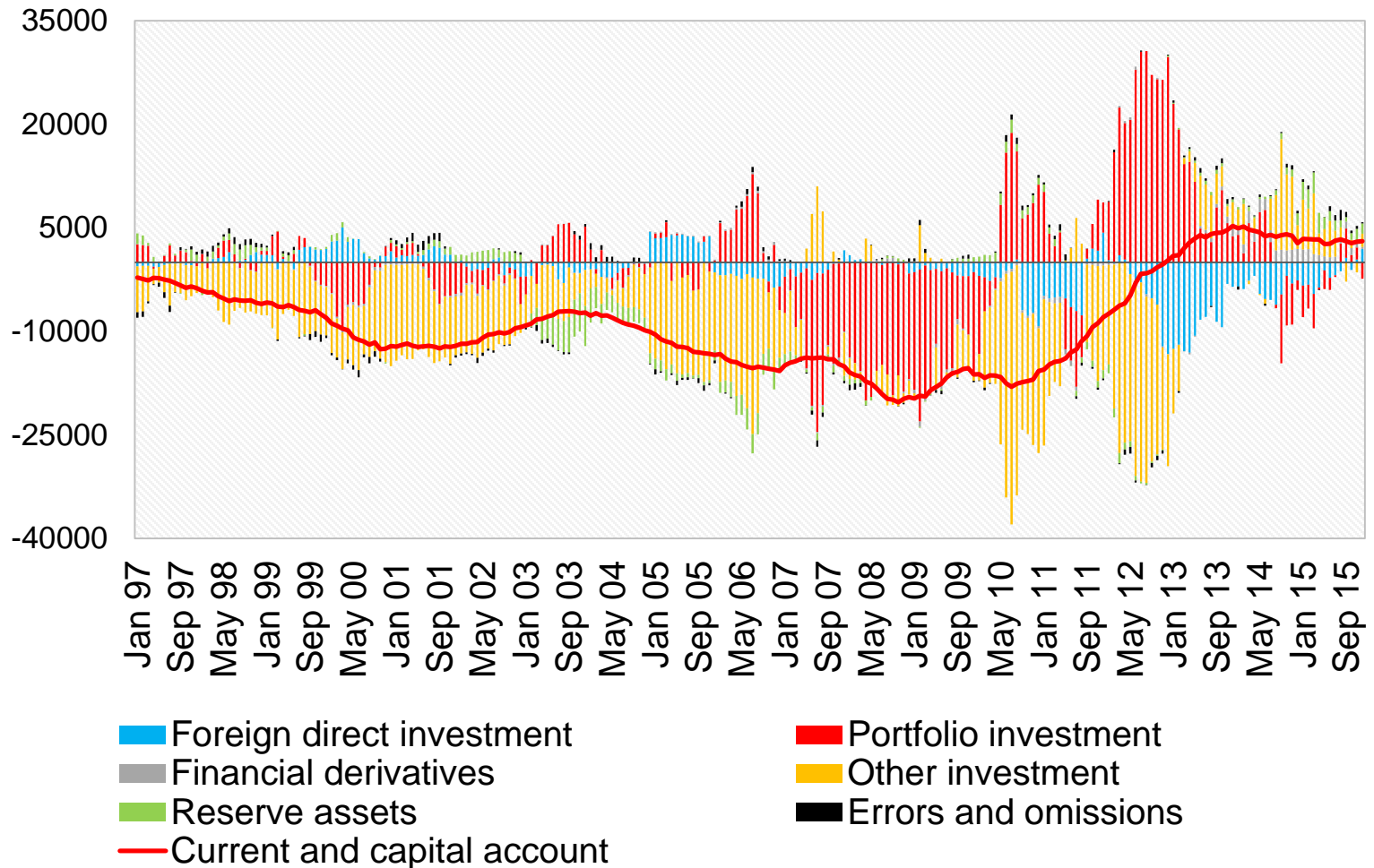
Meeting **2016 IFC Conference**

External statistics
International Investment Position decomposition; interaction between stocks and flows
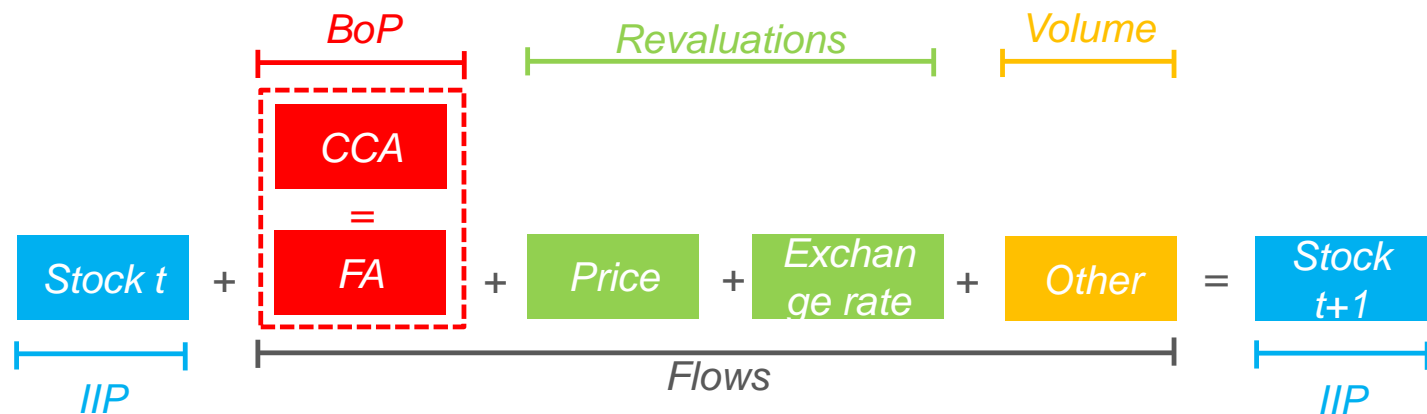
Portuguese BoP
(12 month accumulated flows, MEUR)

Legend:
- Foreign direct investment (blue)
- Portfolio investment (red)
- Financial derivatives (grey)
- Other investment (yellow)
- Reserve assets (green)
- Errors and omissions (black)
- Current and capital account (red line)
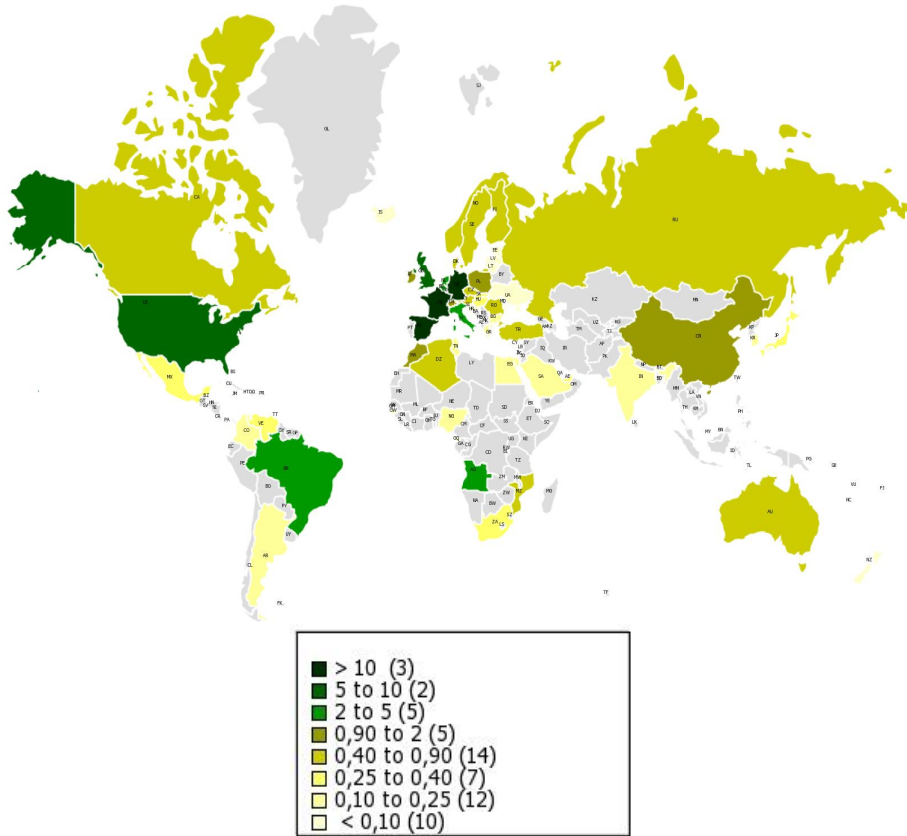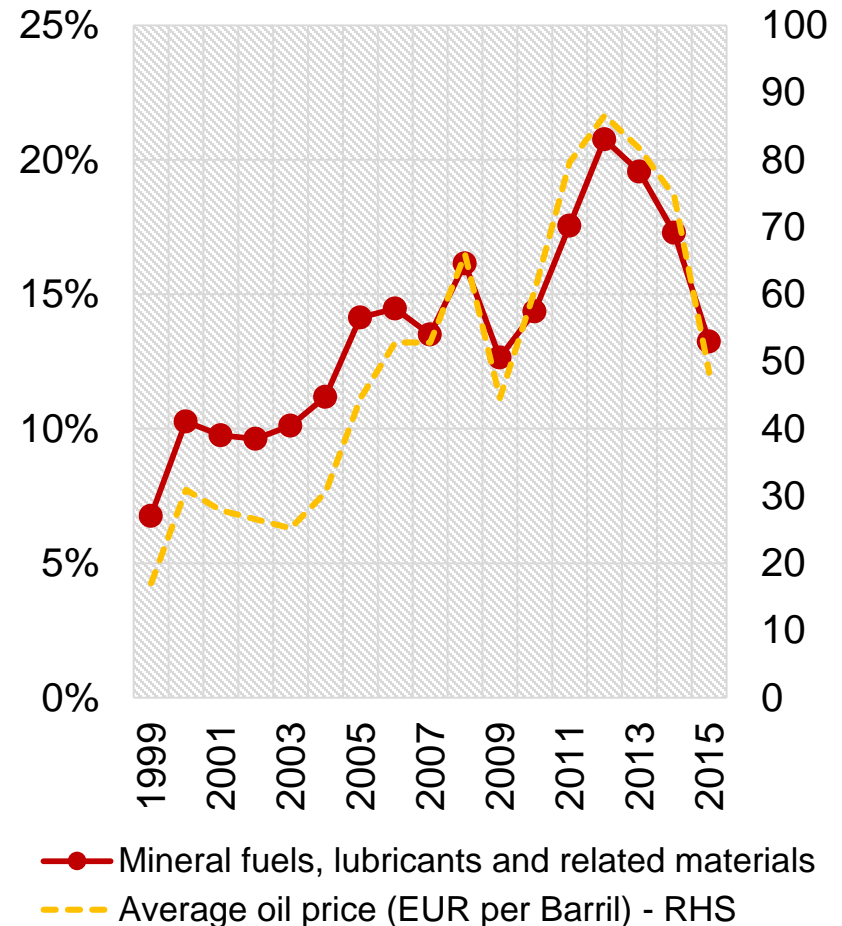
After 2010 increase of the financial transactions, both assets and liabilities
External loans (Bailout Programme); Amortizations of debt securities; Intra-group inflows

Portuguese exports by counterpart

Weight of mineral fuels and lubricants on Portuguese imports

Legend (map):
- > 10 (3)
- 5 to 10 (2)
- 2 to 5 (5)
- 0,90 to 2 (5)
- 0,40 to 0,90 (14)
- 0,25 to 0,40 (7)
- 0,10 to 0,25 (12)
- < 0,10 (10)

— Mineral fuels, lubricants and related materials
--- Average oil price (EUR per Barril) - RHS

CCA reversal (2012) Analysis has to be complemented by the composition of the CCA; diversification of exports and imports; external dependency

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GDP ↑

Internal demand + External demand

Consumption ↑

Investment ≈

CCA ↑

World net lender

Foreign direct investment *'long-term'* ↓

+

Portfolio investment *'volatile'* ↑
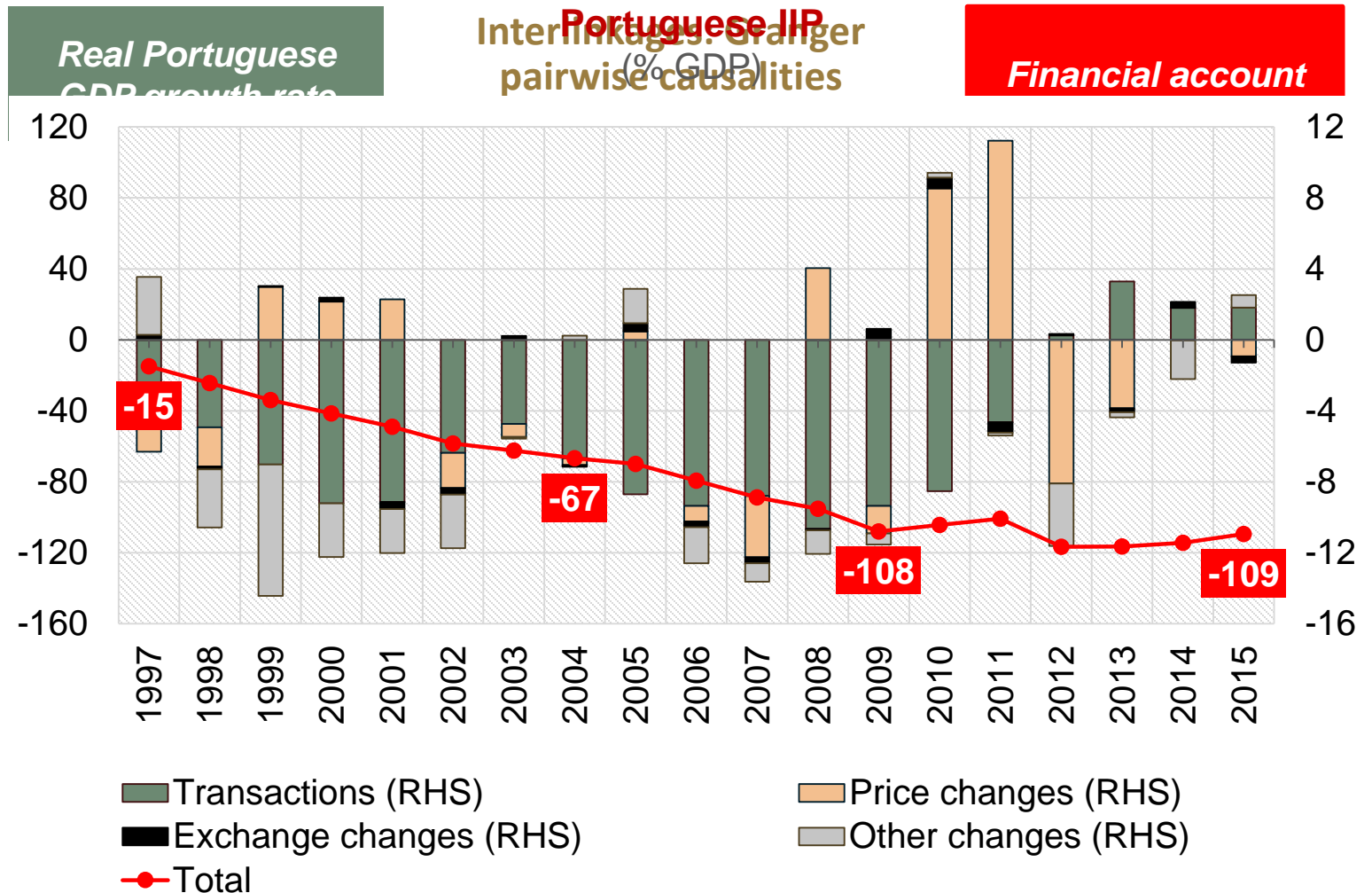
+

Remaining ≈

Financial account transactions

Financial transactions are **positive** mainly due to **Portfolio investment**. CCA is positive, **Portugal is a net lender**. Internal **consumption** and GDP increase.

IIP (2015)

Other adjust.

Price changes

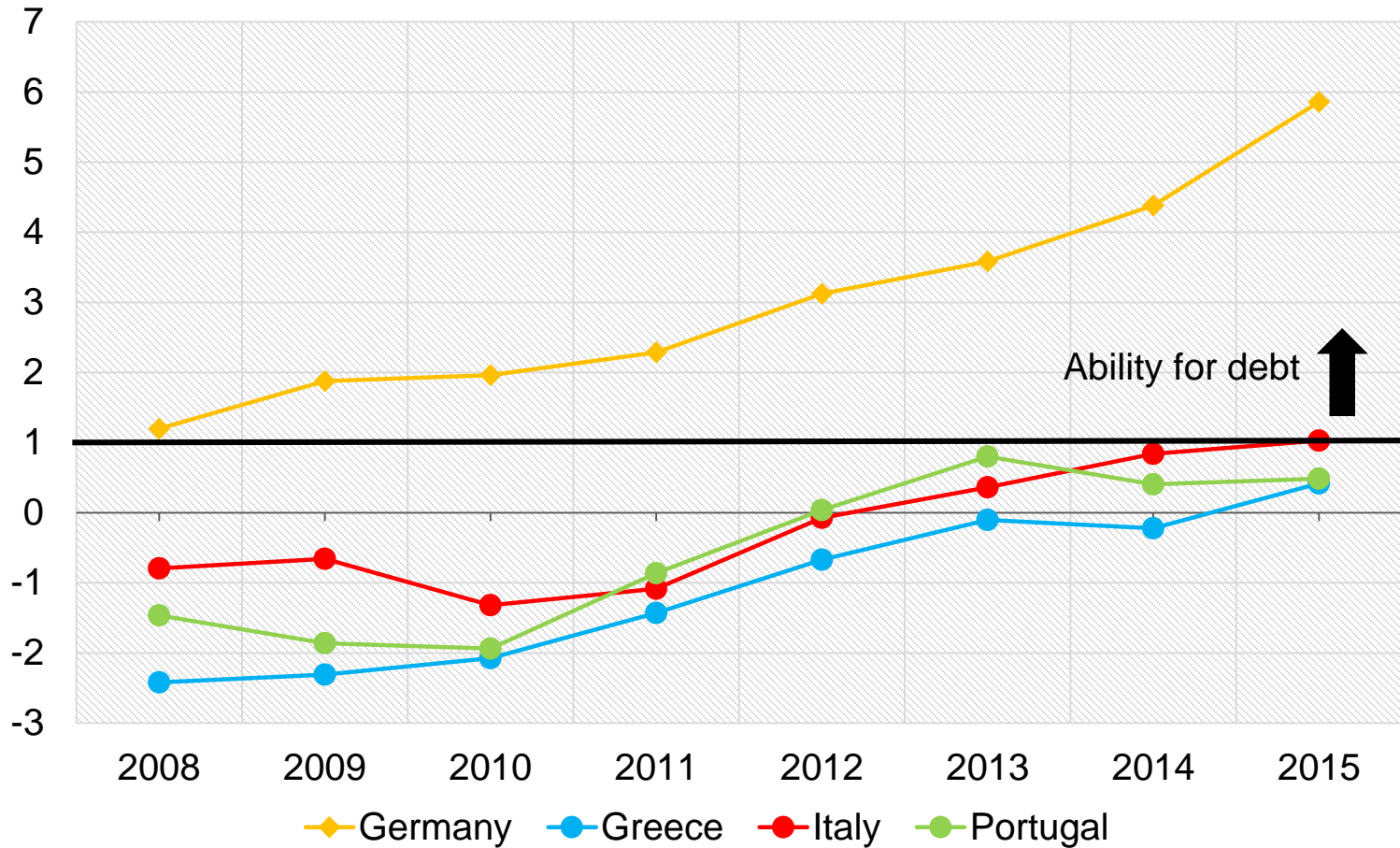Exchange changes

IIP (2012)

- 109% GDP

__Uncertainty and globalization__ After the recent financial crisis, Portuguese level of international investment position is mostly influenced by price changes

Real Portuguese GDP growth rate

Interlinkages: Granger pairwise causalities

Portuguese IIP (% GDP)

Financial account

Legend:
- Transactions (RHS)
- Price changes (RHS)
- Exchange changes (RHS)
- Other changes (RHS)
- Total

SRED between 2008 and 2015 DE, PT, IT and GR show an improvement of this indicator

Solvency Ratio of External Debt - SRED
(CCA as a % of interest and principal payments)

Ability for debt

Legend: —◆— Germany —●— Greece —●— Italy —●— Portugal

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External statistics measure competitiveness

CCA cannot be disregarded from financial components

Competitiveness

Pairwise causality between external statistics and other macroeconomic phenomena

External statistics can support decision makers