

Imbalances and Debt Crisis in the Euro Area¹

Juraj SIPKO*

Abstract

The main goal of the article is to analyse some critical macro and microeconomic indicators between 1995 and 2012 in EU member states, but in particular, in the Euro Area. By using quantitative and comparative analysis, the paper found that there is a trend of both internal and external imbalances within the single currency area. Both regression and correlation analysis indicated statistically significant relations between the key macro and microeconomic indicators, such as the current account, market share, net international investment position, fiscal deficit and public debt, including imbalances in the TARGET2 system. Based on this, the paper came to the conclusion that put the economies on a sustainable, solid and balanced economic growth path in the eurozone countries, comprehensive structural reform agenda is needed, adopting and implementing the medium-term fiscal consolidation plans a the creation of banking union would be critical.

Keywords: *current account, fiscal balance, public debt*

JEL Classification: F32, H60, H63

Introduction

The Rome Treaty set up very ambitious goals to create the European Community, which was further developed by adopting and implementing an institutional and legal framework for the creation of the European Single Market. During the final stage of the overall integration process in the old continent a very ambition goal was adopted – the creation of the Economic and Monetary Union (EMU). Based on the theoretical approach of Mundell² (1961) and McKinnon

* Juraj SIPKO, Institute of Economic Research SAS, Šancová 56, 811 05 Bratislava 1, Slovak Republic; Pan-European University, Faculty Economics and Business, Tematinská 10, 851 05 Bratislava, Slovak Republic; e-mail: jurajsipko@gmail.com

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(1963), despite the progress which has been made since the creation of the single currency, there are still some open questions concerning the degree to which the Euro Area fulfils the main feature of the optimal currency area.

The creation of the EMU as a final stage of the overall integration process was an unprecedented step in the right direction in modern economic history in the old continent. In order to fulfil the main goal to create the single currency area the Maastricht Treaty was adopted. In this Treaty are clearly specified all the necessary conditions and requirements for establishing a well-functioning EMU. From the early beginning of the creation of the EMU, there was intensive discussion about the role of fiscal policy in the single currency area. In line with the Maastricht Treaty, the Stability and Growth Pact (SGP) was adopted for establishing the rules for maintaining public finance on a sustainable level. Unfortunately, the main principles and rules under the SGP have been permanently broken in some Euro Area countries, but, mainly in those countries that now face both huge internal and external imbalances.

There is empirical evidence that growing external imbalances are linked to fiscal deterioration. Therefore, the main goal of this paper is to analyse the main factors behind the present overall imbalances, in particular, the unsustainability of the current account and its implications on an unfavourable trend of public debt in some Euro Area countries.

1. Theoretical Approach and Methodology

The latest development in the world economy warrants special attention. Academia, researchers, economists and policy-makers are looking for an answer to what is behind pre- present stage of the external imbalances that have significantly contributed to an unprecedented unfavourable development of public finance in some EU countries, but mainly in some Euro Area countries.

Generally, the trade imbalances within the single currency area currently are one of the key concern. However, these imbalances reflect an important feature of external imbalances and thus the systemic risk and deviation from equilibrium. Although an exact definition of external imbalances does not exist, there is

² *The Theory of Optimal currency area* clearly demonstrates the prerequisites for a well-functioning currency area. Mundell, in his theory, emphasized that an independent monetary policy is essential. In addition, Mundell underlined that for the creation of an optimal currency area the following conditions should be fulfilled: Individual countries have the same symmetric cycles; Mundell underscored in his theory that the potential members of the monetary union should have the highest level of political integration; Mundell set out that in an Optimal currency area there should be a high degree of flexibility of nominal wages and prices; One of the critical factors for establishing an optimal currency area is trade interconnection and the existence of mobility of production factors.

a generally accepted agreement that “external positions of systemically important economies that reflect distortions or entail risks for the global economy” (ECB, 2008, p. 12). This definition covers both current account and financial account.

In line with this, the Directorate General Internal Policies of European Parliament (see Mrak, 2011) offers the explanations of external imbalance’s concept. It is described that two most possible dimensions are encompassing and creating the imbalance. First, it refers to the current account imbalance, which means surplus or deficit that could be specifically mentioned in terms of the difference between domestic savings and investment. The later refers to the relation of capital to the financial account. If domestic savings are higher than investments this leads to the current account surplus. On the other hand, if a country invests more than it saves, then domestic savings must be complemented with foreign savings, which could mean a net inflow of savings from overseas. The difference between domestic savings and investment explains the current account imbalance.

In addition, it describes external imbalances between both the capital and financial accounts. If a country has a current account deficit, it needs foreign exchange to finance it. Large net capital inflows or outflows are caused by current account deficits or surpluses that have direct implications on exchange rates. In the same direction, as concerns current account surplus countries, extra foreign exchange generated through larger exports than imports can be used.

Currently used the definition of external imbalances consists of the following elements: i.e., it refers to external positions, encompassing current account positions as well as financial positions. In addition, it refers to important Euro Area economies, including both the deficit side (Greece, Italy, Portugal, Spain), and the surplus side (Germany, Finland, Netherlands). Therefore, in line with the current account imbalances in some Euro Area countries, it is necessary to analyse how these imbalances are connected with the fiscal stance. In line with the growing external imbalances and their impact on fiscal sustainability, there are new approaches in literature.

In analysing the implications of external imbalances and their impact on public finance, a methodology was used to describe the situations in which the mean of public debt of individual countries in the Euro Area is treated as a variable dependent on the value of another variable such as current account as well as export market shares. A simple linear regression analysis using the method of least-squares estimation gives us the best fit line model only under fulfilled assumptions of the method. However, in the case when regression outliers are confirmed, there are two options i.e., excluding outliers from further analyses or using the method of estimation which is not sensitive to outliers.

Despite the fact that regression outliers are detected in the presented article, it is important from an economic standpoint to include outliers in the analysis. In this regard, it might be more suitable to use a method that is more resistant to outliers than least squares, such as the 3-median method. This method is used when data shows a linear relationship and when it contains outliers.

Nonetheless, the coefficient of correlation as a measure of linear relationship between two variables is the same without dependency on method of estimation of best fit line model when outliers are included in the model. Additionally, by excluding recognised regression outliers from analysis, the coefficient of correlation becomes higher while the p-value of the test of its significance becomes even lower.

In the article, as a result of the test of correlation coefficient, statistical significance is expressed using the p-value. A p-value (the observed significance level) less than α level of significance implies that the correlation between the two variables is significant with $100(1 - \alpha)$ % of confidence. For the simple regression and correlation methodology, see e.g. McClave, Benson and Sincich (2008).

2. Literature Overview

Since the outbreak of the global financial crisis and recession numerous articles and research papers have been published in relation to the present current account imbalances in the Euro Area countries.

Olivier Blanchard and Maria Milesi-Ferretti (2009) provide a clear analysis of the global imbalance. They describe the difference between 'good' and 'bad' current account deficits. Bad current account deficits are those which result from domestic distortions or excessive fiscal positions. Blanchard and Milesi-Ferretti and also comment that it is important to look beyond current accounts to the whole structure of the capital (financial) accounts. They assume that current accounts are fundamentally endogenous that reflect the net outcome between savings and investment decisions taken by households, businesses and government across the whole economy. In addition, they emphasized that the current account position is a symptom not the cause. They noted that the capital (or financial) account, which is the mirror of the current account, is the net of large capital flows. These flows reflect the financial decisions taken by both domestic and foreign investors.

Historically, many researchers have found growing external imbalances within the Euro Area countries. In this regard, Blanchard and Giavazzi (2002) developed a theoretical empirical framework to investigate persistent imbalances in the single currency area. This framework focuses on the current account deficits

of Southern Euro Area countries and the surpluses of Northern Euro Area countries. In line with this approach, Schmitz and von Hagen (2009) confirm the relationship between trade balances and per capita incomes in some EU countries over the period from 1981 to 2005. In terms of current account sustainability, literature finds that if the current account deficit is higher than 6% of GDP in the Southern Euro Area countries, it is considered to be unsustainable.

The global financial crisis and global recession deepened the persistent imbalances in the Southern Euro Area countries. Berger and Nitsch (2010) perceive these persistent imbalances in bilateral trade to be a result of rigid labour markets and growing spreads in competitiveness levels. Jaumotte and Sodswiboon (2010) find that a significant part of the current account deficit is not explained by medium-term fundamentals, such as demographic trends, the level of development relative to trading partners, relative fiscal positions, etc.

The global financial turmoil brought about excessive imbalances, driven by the existing current account deficit, in a majority of the Euro Area countries. Buiters, Michels and Rahbari (2011) find that excessive imbalances are evident particularly in the TARGET2 system. Some authors suggest that the growing imbalances are a result of capital flows Pisani-Ferry and Merler (2012), Bornhorst and Mody (2012) find that the TARGET2 imbalances are more related to private financial account movements than changes in current account deficits.

Since the European Monetary Union has been in place for more than 14 years, it is necessary to make an ex post assessment of previous economic development, which contributed to the present economic imbalances, which have caused unsustainable levels of public finance in some Euro Area countries.

3. The Past Development of the EMU

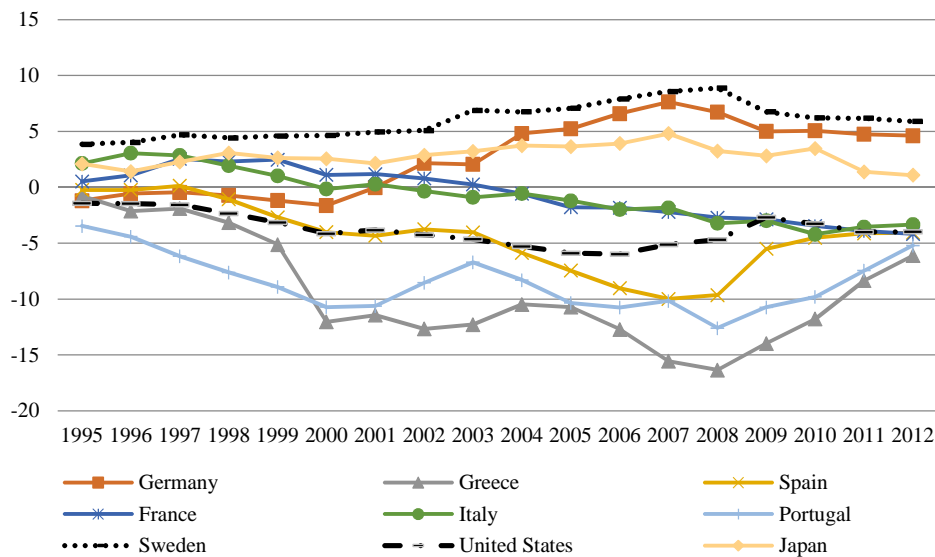
To be better understand the present stage of EMU development, it is important to analyse past development. Historically, before the establishment of the single currency area, macroeconomic development was relatively promising. However, later on, there have been some trends of divergence between the Euro Area countries. The question what is behind the unsustainable development of EMU? What are the main factors which contributed to the deterioration of the overall economic development in EMU? Which factors are behind the fiscal unsustainability – the debt crisis, widespread economic imbalances or the vulnerability of some EMU member states?

Therefore, it is of utmost importance to do a comprehensive analysis of the main macroeconomic indicators in the EMU which might have caused the growing external imbalances, but mostly, of the current account deficit.

3.1. Current Account

The external balance is always very important for the assessment of competitiveness and real convergence in Euro Area countries. Figure 1 shows the development of the current account since 1995, including an outlook for 2012. This graph demonstrates that the higher the current account deficit, the higher the public debt. On one side, countries such as Greece, Portugal and Spain have had a current account deficit since 1995. On the other side, Sweden, which has a higher current account surplus, also has a low fiscal deficit and public debt.

Figure 1
Current Account Balance



Source: Author's graph set out from Eurostat data (1995 – 2012).

This graph also describes that there was a more convergent trend within Euro Area countries before the creation the single currency area. The higher the export, the higher the value added of export and the higher the current account surplus, as in Germany and Sweden. The best approach in analysing the current account position is using the basing concept determined by saving and investment.

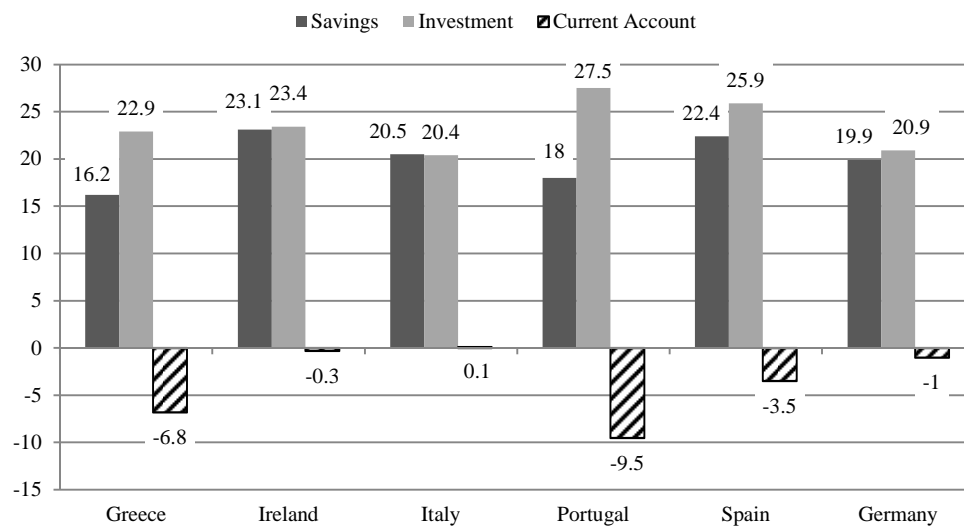
3.2. Saving and Investment

For better clarification of the present stage of unfavourable current account development, it is necessary to analyse the historical development of their position at the beginning of the creation of EMU. Figure 2 compares saving and

investment and their impact on the current account in most debtor countries in comparison with the most prosperous country that Germany is. Figure 2 clearly shows that a majority of currently highly indebted countries, in particular, Greece, Portugal, including Spain, have reached a different proportion between saving and investment and different levels of an unsustainable current account deficit, namely in Greece and Portugal. These two countries are currently under a strong stabilization program with „Troika“.

Figure 2

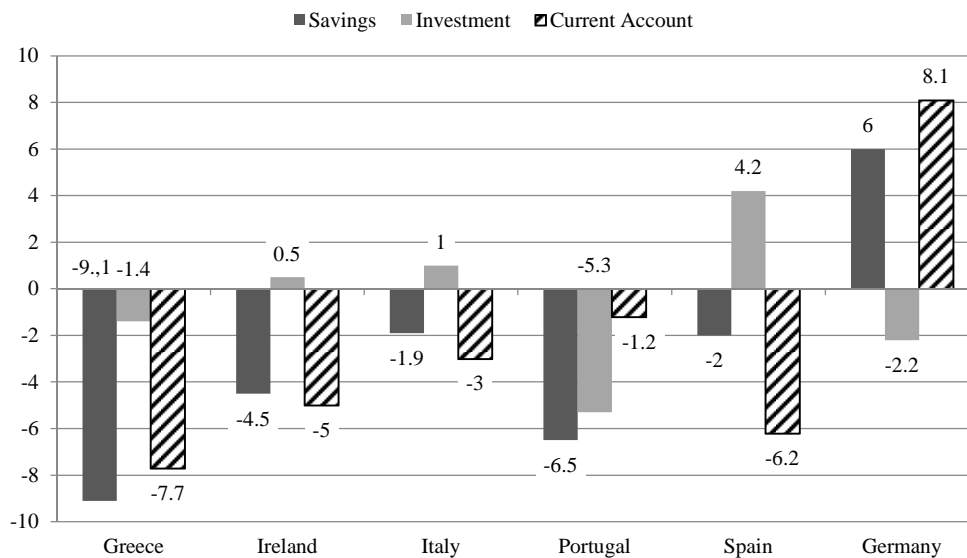
Saving, Investment and Current Account (% of GDP, 1999 – 2003)



Source: Author's graph set out from Eurostat and IMF data (1999 – 2003).

To analyse the huge negative proportions between saving and investment at the beginning of the creation of the EMU in comparison with Germany, it is necessary to compare the changes after the outbreak of the global financial crisis and recession between 2007 and 2008. Figure 3 demonstrates that due to the real external shocks, all debtor countries namely, Portugal, Italy, Ireland, Greece, Spain (well-known PIIGS countries) have reached negative trends in terms of saving, which caused unsustainable levels of the current account deficits, namely, in such countries as Greece, Spain, Ireland and a relatively manageable level of current account deficit in the case of Italy. Here again Germany offers a textbook example of the theoretically used concept of the current account by using saving and investment – the higher the saving, the higher the current account surplus.

Figure 3
Changes in Saving, Investment and Current Account (changes 1999 – 2001 to 2007 – 2008)



Source: Author's graph set out from Eurostat and IMF data (1999 – 2008).

From this historical analysis, it is clear that those countries that have reached higher proportions between saving and investment in favour of investment before the crisis, have reached also unsustainable current account deficits which have deepened during the global financial crisis and recession.

3.3. Interrelation between GDP, Current Account and Fiscal Deficit

The global financial crisis significantly contributed to the deterioration of fiscal sustainability in Euro Area countries (see Tab. 1). The table clearly demonstrates two groups of countries.

On one side, such countries as Finland, Germany and Netherlands implemented structural reforms in the past and have relatively high productivity growth and their products are very competitive in the international market. These countries do not have problems with the sustainability of public finance and debt sustainability.

This group of countries has reached a current account surplus even when the global economy was in a mild path of recovery (2010 – 2011). High productivity growth combined with highly competitive products significantly contributes to the positive external positions in these countries.

Table 1
Real GDP Growth, Current Account, Fiscal Deficit, Public Debt of Selected Eurozone Countries

Country	GDP			Current account			Fiscal deficit		
	2010	2011	2112	2010	2011	2112	2010	2011	2112
Finland	6.6	3.5	2.2	3.1	2.5	2.5	-1.3	-1.2	-1.2
Germany	3.6	2.7	1.3	5.7	5.0	4.9	-1.0	-1.1	-0.9
Netherlands	1.6	1.6	1.3	7.1	7.5	7.7	-4.4	-3.5	-3.7
Greece	-4.4	-5.0	-2.0	-10.5	-8.4	-6.7	-9.5	-7.2	-6.9
Italy	1.3	0.6	0.3	-3.3	-3.5	-3.0	-4.0	-2.7	-2.5
Ireland	-0.4	0.4	1.5	0.5	1.8	1.9	-10.3	-8.5	-7.7
Portugal	1.3	2.2	-1.8	-9.9	-8.6	-6.4	-7.2	-4.8	-4.4
Spain	-0.1	0.8	1.1	-4.6	-3.8	-3.1	-6.7	-6.0	-5.6
Slovakia	4.0	3.3	3.3	-3.5	-1.3	-1.1	-6.0	-5.7	-5.9
Euro Area	1.8	1.6	1.1	0.8	0.8	1.0	-4.1	-3.5	-3.3

Source: Table set from Eurostat and IMF data (2010 – 2012).

On the other side, countries such as Greece, Ireland, Italy, Portugal, Spain and Slovakia, with relatively low levels of structural reforms, very low productivity growth and with a relatively very low level of competitiveness, have reached current account deficits.³ Based on the economic outlooks of the International Monetary Fund (IMF), European Commission (EC), European Central Bank (ECB), fiscal deficit have been improved during 2012 – 2013. However, the public debt sustainability will be deteriorated path for the same period for all debtor countries, but mainly in Greece, Ireland, Italy, Portugal and Spain.

The global financial crisis unprecedentedly hit almost all EMU countries, but in particular, Greece, Ireland and Portugal, with Italy and Spain shortly thereafter. In Greece, the origin of crisis lies in the government sector. The Greek authorities were not able to manage public finances appropriately. On one side, revenues significantly decreased and expenditures rose due to high social transfers and high pensions. Therefore, the Greek authorities applied for an adjustment program with the EC, ECB and the IMF.

The program was oriented on both fiscal policy and structural policy. In terms of an adjustment program and its implementation in Greece, the political commitment did not materialize. Therefore, Greece applied for a second program with the EC, ECB and IMF. This program was focused on debt sustainability. In addition, in order to realize productivity gains, the new program was oriented on liberalization of labour and service markets. So, this approach concentrated on improving competitiveness. The main idea was to eliminate wage rigidities and to create conditions so that the wage level would be consistent with the growth of productivity. In this regard, labour costs should improve by about 15% by 2015.

³Researchers, academia, economists and policy-makers generally agree that the higher the current account deficit, the higher the public debt.

Furthermore, a new program has addressed Greece's unsustainable debt dynamics. Except a nominal reduction in the value of bonds by 53.5%, there is also an interest rate reduction on official debt. Despite these very positive conditions, which are very generous, there is still a problem with financing needs. Based on the conditions set out in the program, Greece will be able to reduce public debt to a range of 116 – 117% by 2020. In order to fulfil this very ambitious goal, the Greek authorities should implement all the necessary measures in a timely manner. One of the key factors that significantly contributed to the present unfavourable development in the Euro Area countries are excessive imbalances.

3.4. Excessive Imbalances

After the breakout of the global financial crisis and the global recession during the last three years, the situation in EMU countries has significantly deteriorated. There have been some trends of divergence instead of convergence.

The latest data clearly demonstrates that in the EMU countries, the economic imbalances continued and that the Euro Area countries is dealing with the vulnerability of the main macroeconomic indicators (see Table 2).

This negative economic development caused the present sovereign debt crisis in the Euro Area countries. At present, in the single currency area, there are two groups of countries. The first group of countries has reached a high level of competitiveness, such as Finland, Germany and Netherlands. The second group of countries, such as the now well-known PIIGS countries, are not able to compete in the international market.

The countries with high productivity growth have reached a high level of foreign exchange reserves, which significantly contributed to the Net Investment Position (NIP), see Table 2. Both the current account surplus and an export market share have positive impact on lowering public debt.

The results of fitting a linear model to describe the positive linear relationship between the public debt and the current account deficit of some selected countries are presented on Figure 4.

Since the p-value calculated in the ANOVA table is less than 0.05, there is a statistically significant relationship between the public debt and the current account deficit at the 95.0% confidence level, including such countries as Estonia, Greece, Ireland, Portugal, the Slovak Republic, Slovenia and Spain. The correlation coefficient $r = -0.47$ indicates a medium negative linear relationship between public debt and the current account surplus. However, there is a positive correlation of general government debt with the current account deficit.

Table 2
Excessive Imbalances in the Euro Area Countries

2009 – 2011	Current Account Balance (% of GDP, 3 years average)	Net International Investment Position (% of GDP)	Export Market Shares (5 years % change)	Real Effective Exchange Rate, HICP deflated (3 years % change)	Nominal Unit Labour Cost (3 years % change)	Private Sector Credit Flow (% of GDP)	Private Sector Debt (% of GDP)	General Government Debt (% of GDP)	Net Balance with the Eurosystem/ TARGET (bn EUR, 3 years average)
Belgium	-0.8	66.9	-15.7	-0.2	7.6	16.4	233.9	96.2	-38 156
Germany	5.5	37.5	-8.3	-4.2	6.8	3.8	136.4	83.2	263 577
Estonia	1.2	-65.2	0.0	2.8	1.4	-3.7	165.0	6.7	166
Ireland	-1.8	-86.5	-12.7	-8.1	-7.3	-2.5	288.3	92.5	-91 894
Greece	-11.3	-93.7	-20.0	3.2	6.6	-3.2	126.8	144.9	-71 085
Spain	-5.5	-96.0	-11.9	-0.9	-0.1	-2.5	220.1	61.0	-57 484
France	-1.8	-10.9	-19.3	-3.2	6.6	7.4	160.7	82.3	-52 568
Italy	-3.1	-26.6	-19.0	-2.3	6.9	4.5	134.9	118.4	19 507
Cyprus	-10.4	-62.4	-16.7	-0.2	7.8	27.9	316.3	61.5	-7 750
Luxembourg	6.4	126.4	2.3	1.0	16.8	-4.9	259.9	19.1	61 321
Malta	-3.3	0.0	0.0	-2.9	5.7	-	209.2	69.0	-623
Netherlands	5.6	30.9	-8.1	-2.0	6.3	3.1	218.7	62.9	30 692
Austria	3.1	-7.7	-15.1	-1.9	7.1	5.8	160.7	71.8	-27 572
Portugal	-10.6	-104.6	-9.5	-2.8	3.4	3.6	247.4	93.3	-43 421
Slovenia	-2.1	-34.9	-5.9	0.2	13.1	1.0	128.2	38.8	-2 694
Slovakia	-3.1	-64.2	32.1	8.8	8.4	4.9	74.2	41.0	-13 818
Finland	1.6	11.9	-18.8	-0.9	10.5	2.3	172.4	48.3	10 738

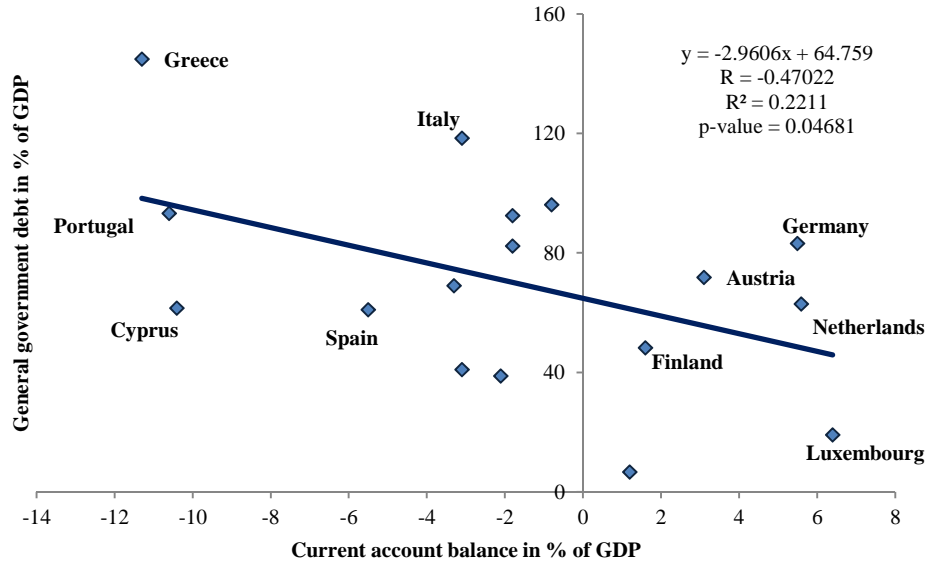
Source: Table set from Eurostat, ECB and IMF data (2009 – 2011).

However, countries with a relatively high current account surplus, such as Germany, Finland, Netherlands, and Luxemburg have manageable public debt positions. The higher the value added of export, the higher the current account surplus and the lower the public debt (see Figure 4).

The results of fitting a linear model to describe the positive linear relationship between the public debt and the current account balance of some selected countries are summarized in Table 3 and graphically displayed on the Figure 5.

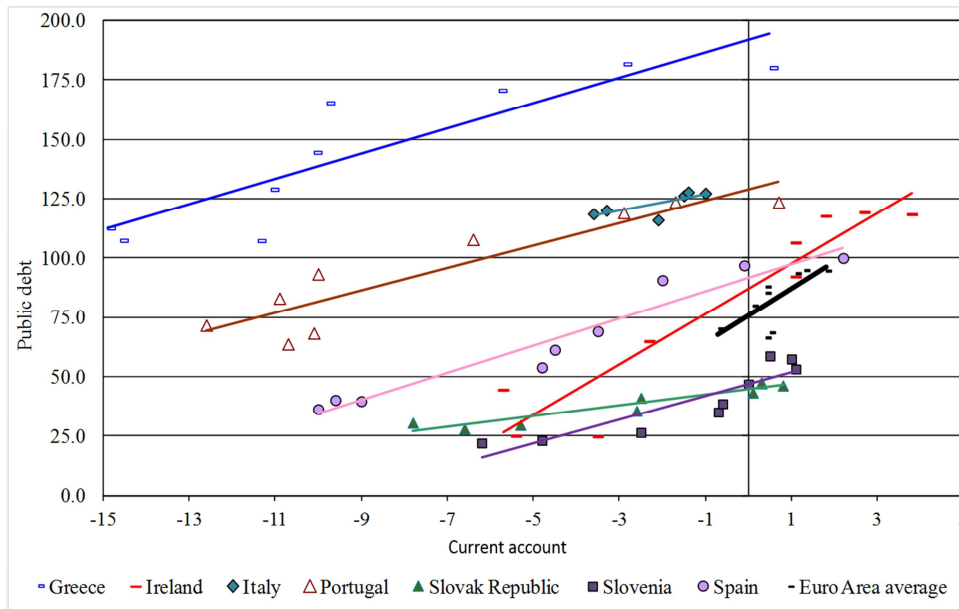
Since the p-values, calculated in the ANOVA tables, are less than 0.05, there is a statistically significant relationship between public debt and the current account balance at the 95.0% confidence level, including such countries as Denmark, Estonia, Greece, Ireland, Portugal, the Slovak Republic, Slovenia, and Spain, as well as the average in Euro Area countries.

Figure 4
Public Debt vs. Current Account Balance



Source: Author's graph set out from Eurostat and IMF data (2012).

Figure 5
Public Debt vs. Current Account – Positive Correlation (% of GDP)



Source: Author's graph set out from Eurostat and IMF data (2006 – 2013; progn. 2017).

The correlation coefficients from 0.7086 (Estonia) to 0.9692 (Spain) indicate a relatively strong linear relationship between public debt and current account balance. However, that is the principally strongest positive correlation in the countries with the highest current account deficit.

Conversely, the higher the value added of export, the higher the current account surplus, the lower public debt as (see Table 3); in particular, in Germany (for linear relationship in the period of time 2006 – 2013 measured by a correlation coefficient of $r = -0.7191$; $p = 0.0290$), Austria ($r = -0.7665$; $p = 0.0160$), and Finland (with the strongest negative correlation $r = -0.9055$, $p = 0.0008$). For the graphical explanation of the negative linear correlations of current account surplus and public debt, see the considerable negative slopes of the fitted linear models of Austria, Finland and Germany on Figure 6.

The *R*-squared statistic of the last row in Table 3 indicates that the linear model of average public debt as fitted explains a high proportion (52.6662%) of the variability by change of average current account for the Euro Area countries.

Table 3

Results of Regression and Correlation Analysis of Public Debt vs. Current Account (2006 – 2012)

Linear model: public debt vs. current account*	Slope		<i>f</i> -ratio	<i>p</i> -value	<i>r</i> correlation coefficient	<i>r</i> -squared (adjusted for d.f.) in %
	least squares estimate	<i>t</i> statistic				
Austria	-3.80	-3.16	9.97	0.02	-0.77	52.86
Belgium	-1.08	-0.74	0.55	0.48	-0.27	7.23
Denmark	1.98	2.83	8.02	0.03	0.73	46.73
Estonia	0.20	2.66	7.06	0.03	0.71	43.10
Finland	-2.88	5.64	31.86	0.00	-0.90	79.41
France	-4.54	-0.59	0.35	0.57	-0.22	4.72
Germany	-5.57	-2.74	7.49	0.03	-0.72	44.81
Greece	5.34	5.09	25.93	0.00	0.89	75.70
Ireland	10.63	7.85	61.69	0.00	0.95	88.35
Italy	1.12	0.30	0.09	0.78	0.11	1.24
Netherlands	0.05	0.03	0.00	0.98	0.01	0.01
Portugal	4.70	6.20	38.49	0.00	0.91	82.41
SR	2.32	8.02	64.35	0.00	0.95	88.79
Slovenia	5.03	5.52	30.42	0.00	0.91	78.62
Spain	5.71	10.42	108.55	0.00	0.97	93.08
Switzerland	0.36	0.60	0.36	0.57	0.22	4.88
Eurozone	11.54	2.79	7.79	0.03	0.73	45.90

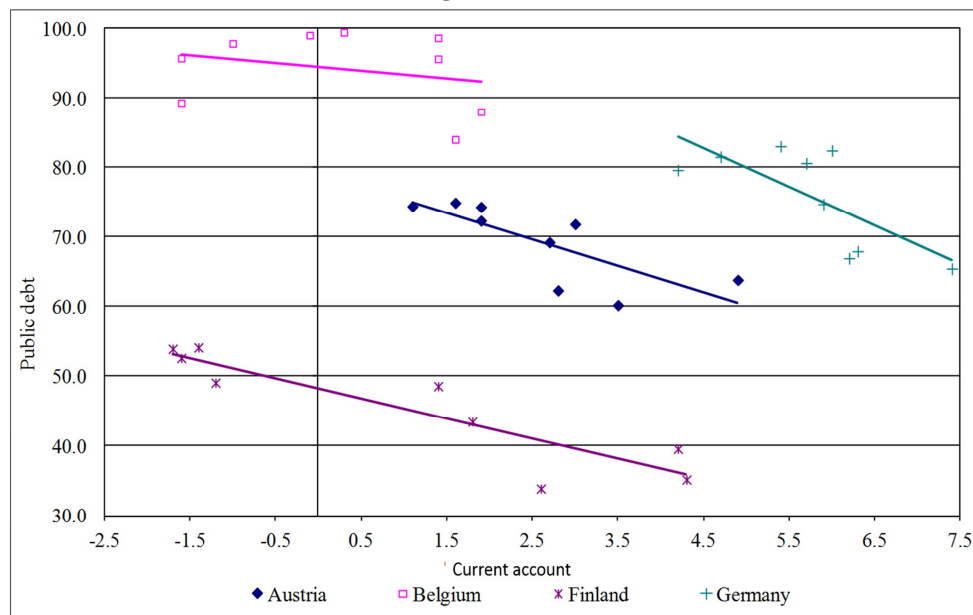
Note: *The Durbin-Watson (DW) statistic tests the residuals to determine if there is any significant correlation based on the order in which they occur in your data file. Since the *p*-value was greater than 0.05 (in all cases) there is no indication of serial autocorrelation in the residuals at the 95.0% confidence level.

Source: Author's calculation based on Eurostat data (2006 – 2012).

On average for the Euro Area countries the correlation coefficient equals 0.725715 ($p = 0.0269$) and indicates a moderately strong positive linear relationship between public debt and current account. In reality, it means that the high level of current account deficit is strongly correlated with the high level of public debt and opposite.

Figure 6

Public Debt vs. Current Account – Negative Correlation (% of GDP)



Source: Author's graph set out from Eurostat and IMF data (2006 – 2013; progn. 2017).

Deterioration of public finance was significant during the outbreak of the global financial crisis and global recession. Some debtor countries have been successful in reducing overall fiscal deficit such as Greece, Ireland and Italy during the last years. However, since the global financial crisis have started, sustainability of public debt was significantly deteriorated in all Euro Area countries, but in particular, in Greece, Ireland, Italy, Portugal and Spain.

Since the EMU was created, some excessive imbalances among the Euro Area countries have appeared. Loss of competitiveness always caused current account deficits and brought about a reduction in economic growth as there was deterioration in public finance. On one side, those countries which are in line with world competition, such as Finland, Germany, Luxembourg and Netherlands have current account surpluses, relatively very high net international investment

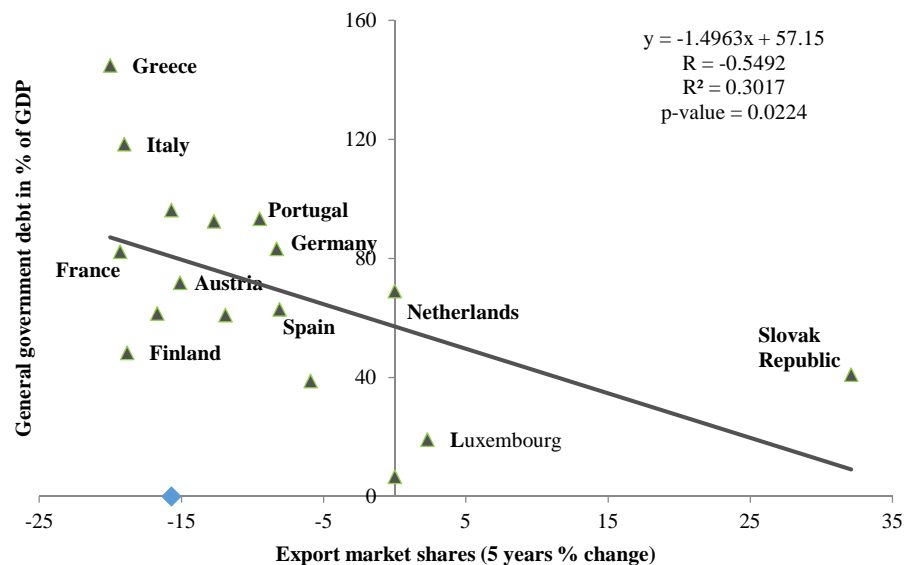
positions, stable labour costs, manageable public debt balances and relatively positive trends in reducing unemployment.

On the other hand, such countries as the present PIIGS, which lost their competitiveness, have current account deficits, negative net international investment positions, experienced a loss in market share, have very high public debt and growing unemployment.

Countries such as Greece, Ireland, Italy, Portugal and Spain, with a low level of structural reforms, very low productivity growth and with a relatively very low level of competitiveness have reached current account deficits.

Figure 7

Public Debt vs. Export Market Shares



Source: Author's graph set out from Eurostat and IMF data (2012).

There is a generally accepted opinion that the higher the current account deficit, the higher the public debt (Kumar and Woo, 2010). Critical for economic development is to measure export performance (Reinhart, 2010).

The majority of countries, including the most technologically developed countries such as France, Germany, Netherlands and Finland, gradually declined their share in the international market of goods and services (see Figure 7). The method of least squares has been used for the estimation parameters of the linear model. However, in the case of testing the regression analysis for outliers, Slovakia has been identified as an outlier.

Based on the methodology, the least squares for estimation parameters of a linear model, Slovakia has to be excluded from this model. (In that case, we came to the following results: correlation coefficient $r = -0.674719$; linear regression $y = -3.19459x + 36.1891$; $r^2 = 45.5246\%$; $p = 0.0041$.) The main purpose of the analysis was to include all countries, including Slovakia. In this regard, it might be better to use a method that is more resistant to outliers than least squares, such as the 3-median method. This method is used when data shows a linear relationship and when it contains outliers. (Using the 3-median method, the equation of the fitted model is: $y = -3.30479x + 36.8541$.)

The main goal of this analysis is to confirm statistically significant correlation between general government debt and export market share of individual Euro Area countries. In this regard, it is important that the linear dependency of the general government debt on export market shares has been confirmed.

The main reason is slow realization of structural reforms, but also a significant factor is steadily growing economies of emerging markets; mainly, in Southeast Asia. The most indebted countries have reached the most remarkable changes (e.g. Greece, Italy, and Portugal).

There are only two countries that have recorded higher export market share – Luxemburg and the Slovak Republic. One explanation for increasing market share of Slovakia might be that it has relatively very low labour costs in comparison with other export-oriented countries in the Euro Area.

By taking into consideration a threshold of 35% of GDP NIIP (Net International Investment Position), there are two clear conclusions. First, those countries whose economies are export-driven, such as Germany, Netherlands, Finland and Luxembourg, have a very high proportion of these indicators. Second, those countries that remarkably lost market share, including deterioration of competitiveness that led to high public debt and have very low (negative) NIIP.

A majority of countries with a very negative trend of NIIP such as Greece, Portugal and Spain also belong to the most indebted countries. Lack of structural reforms and loss of competitiveness are the main factors that contributed to these negative trends in NIIP. In line with growing imbalances, it is necessary to analyse a new phenomenon that relates to the latest imbalances in the TARGET system.

3.5. TARGET2 Imbalances

One of the critical pillars of the creation of the European Monetary Union was the establishment of TARGET2, i.e., a real-time gross settlement system operated by the Eurosystem. This system operates between the central banks of Euro Area countries and was created for the settlement of open market operations. Furthermore, TARGET2 includes cross-border transactions, including the

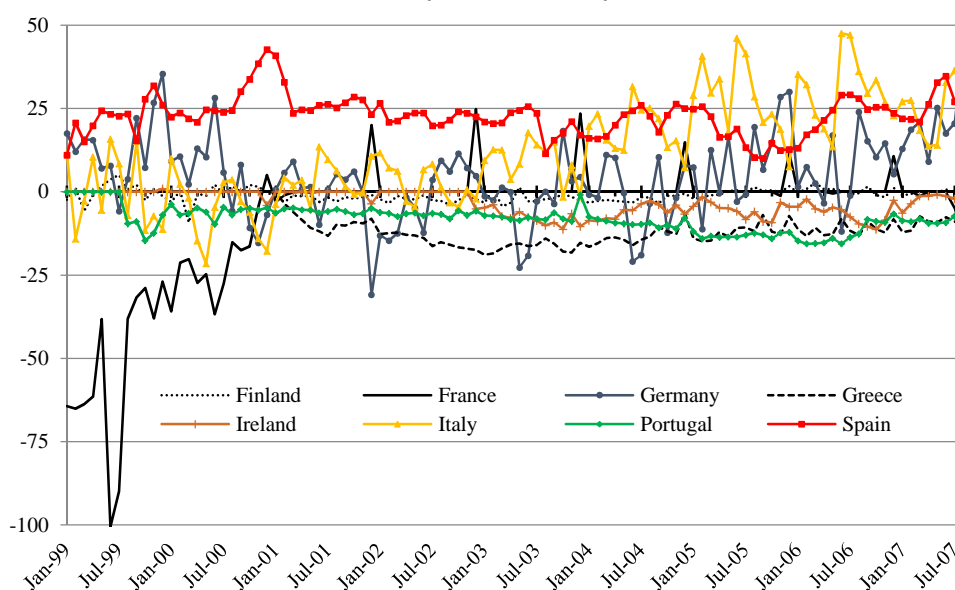
ECB as the central counterpart of the Eurosystem. In reality, since its creation, TARGET2 has been operating as following: a bank that transfers funds located in some Euro Area countries transfers funds to another bank in the Euro Area. This transaction records as a deposit and a bank in the Euro Area that receives the funds records a liability.

The analysis concentrates on two periods. The first period covers data since the creation of TARGET2 until July 2007 and the second period since August 2007 until December 2012.

Since the creation of the European Monetary Union, the TARGET2 was more or less in balance (see Figure 8). It was one example, in the case of France that recorded a relatively high volume of imbalances in a short period of time. However, even some currently high debtor countries such as Portugal and Italy operated with surplus within TARGET2 until the beginning of the global financial crisis.

Figure 8

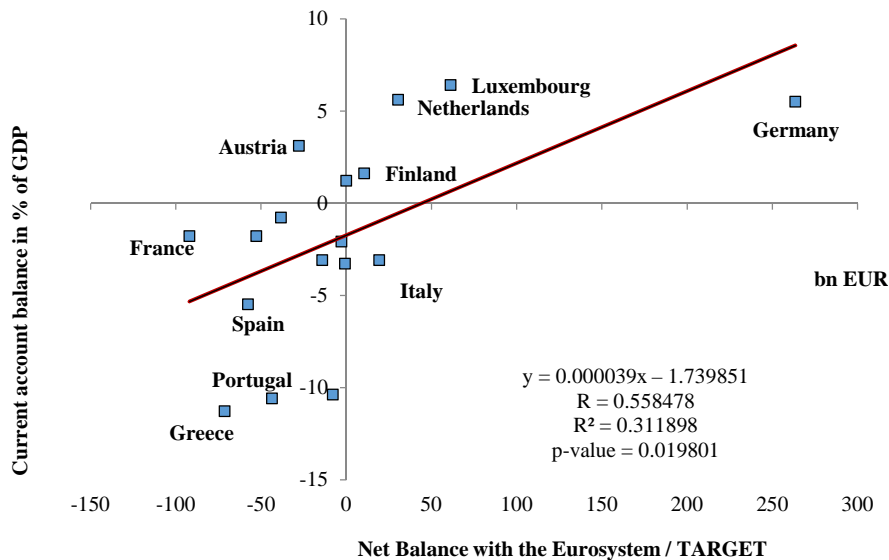
Balance of TARGET2 since January 1999 until July 2007 (bn EUR)



Source: Author's graph set out from Eurostat (2012).

Since the breakdown of the global financial crisis in August 2007, the overall volume of flows under the TARGET2 system has significantly increased. This trend was strongly supported by intensification of the sovereign debt crisis in the Euro Area countries. These very negative trends (Figure 8) have been influenced by the intensification of sovereign debt countries, mainly in peripheral Euro Area countries such as Greece, Portugal, Spain, including Italy.

Figure 9
**Current Account Balance vs. Balance of TARGET2 since August 2007
 until December 2012 (bn EUR)**



Source: Author's graph set out from Eurostat (2012).

Figure 9 clearly demonstrates that on one side, the higher surplus of TARGET2 system, the higher the current account surplus for such countries as Germany, Luxembourg, and Finland.

On the other hand, the higher the current account deficit, the higher the negative balance within the TARGET2 system in such countries as Greece, Portugal, Spain, including France. Here, we found a statistically significant positive correlation between the current account balance and the balance within the TARGET2 system (coefficient of correlation $r = 0.56$; $p = 0.02$).

Conclusion

When EMU was created, the promising trends still appeared in some major macro and microeconomic indicators, mainly on the current account. However, based on analysis using the external account concept, the first lesson could be learned was that countries which have reached higher investment that saving have reached also higher current account deficits. The former significantly contributed to the present unfavourable development of public finance. In this regard, however, one of the critical issues was loss of competitiveness in some countries as well as low level of fiscal discipline. In addition, the latest accumulation of TARGET2 imbalances even more intensified the growing imbalances in the Euro

Area. Here, it might be interesting to learn from researchers, academia, economists and policy-makers what the implications might be if these imbalances will grow further and what their potential consequences on ECB's monetary policy would be.

The second lesson might be learned that the fiscal discipline under the Stability and Growth Pact. Based on official data analysis, there is a clear conclusion that a majority of countries joining the EMU permanently broke down the basic rules in the Stability and Growth Pact. Therefore, an institutional framework for implementing all the necessary measures for stabilizing the fiscal side would be needed. The most important factor is implementation of all necessary measures in this regard. However, these measures should go with the existing international commitments, to foster competitiveness and to increase employment, while maintaining consolidation targets. Therefore, in line with this, the creation of a fiscal union, including risk-sharing, will be a step in the right direction and the lately adopted „fiscal compact“ is promising. Improving fiscal governance will enshrine the fiscal „golden rule“ in EU member states.

The recent developments in some countries in the Euro Area clearly shows that there is no doubt that behind this very unfavourable economic development is relatively poor leadership and the lack of governance of the European Union. Since the European Monetary Union was created as a political project, the fulfilment of their own political commitments would be essential for the future and would save the single currency union.

The main contribution of the paper is the basic analysis regarding both external and internal imbalances in the Euro Area countries and how these imbalances are related to the present unfavourable development of debt crisis in some Euro Area countries. This paper does not cover all aspects of both internal and external imbalances. However, based on comprehensive character of the present financial, economic and debt crisis, it would be very interesting to continue with the further and deeper analysis in this area.

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