

Charles University in Prague

Faculty of Social Sciences
Institute of Economic Studies



MASTER THESIS

The Role of German Economic Policy in Shaping of
European Union and Eurozone

Author: **Bc. Martin Šimunek**

Supervisor: **prof. Ing. Oldřich Dědek Csc.**

Academic Year: **2013/2014**

Declaration of Authorship

The author hereby declares that he compiled this thesis independently, using only the listed resources and literature, and the thesis has not been used to obtain a different or the same degree.

The author grants permission to Charles University to reproduce and to distribute copies of this thesis document in whole or in part.

Prague, July 30, 2014

Signature

Acknowledgments

The author is grateful especially to Prof. Ing. Oldřich Dědek Csc., for his comments, vision and inspiration, as well as for the support of the author's family.

Abstract

The thesis complexly assesses the role of Germany in present European Union and Eurozone, especially its influence and responsibility on the formation of the macroeconomic imbalances before the Eurozone crisis, as well as its resolution. The crisis is caused by a divergence in unit labour costs between member countries, and the thesis aims to evaluate the effect of applied austerity measures in the debtor countries on the adjustment of said unit labour costs divergence. It explores additional policy options available as well.

Keywords	Germany, Eurozone, European Union, crisis, balance of payments, unit labour cost
Author's e-mail	Thormartin@gmail.com
Supervisor's e-mail	dedek@fsv.cuni.cz

Abstrakt

Diplomová práce komplexně vyhodnocuje roli Německa v současné Evropské Unii a Eurozóně, zejména jeho vliv a odpovědnost za formování makroekonomických nerovnováh před vypuknutím krize v Eurozóně, a také na její řešení. Krize je způsobená divergencí jednotkových cen práce jednotlivých členů Eurozóny, a tato diplomová práce má za cíl vyhodnotit efekt aplikovaných úsporných opatření v dlužnických krajinách na změnu této divergence. Zároveň zkoumá možnosti dalších politik a jejich dopady.

Klíčová slova	Německo, Eurozóna, Evropská Unie, krize, platební bilance, jednotková cena práce
E-mail autora	Thormartin@gmail.com
E-mail vedoucího práce	dedek@fsv.cuni.cz

Obsah

Master Thesis Proposal	7
1. Introduction and motivation	9
2 Germany from reunification to global crisis.....	10
2.1. German reunification, Maastricht Treaty and their implications	10
2.2. Performance analysis of German economy	12
2.3. Unemployment and Hartz reform.....	17
2.4. Fiscal policies during the crisis and onward.....	19
3. Maastricht Treaty and Post-Maastricht EU and Eurozone economic development.....	22
3.1. Maastricht revisited.....	22
3.2. Creation of Eurozone and new countries.....	24
3.3. Economic development of European countries post-Maastricht	25
3.4. State of the Union on the verge of crisis.....	30
4. Eurozone-wide Balance of Payments crisis	33
4.1. Nominal wage and productivity	33
4.2. Balance of payments analysis.....	36
4.3. TARGET 2	39
4.4. Imbalance channels inside monetary union.....	40
4.5. Banking crisis	42
5. Applied and potential Balance of Payments policy measures	44
5.1. Bailout mechanism and loan conditions	44
5.2. Effects of austerity measures on restoring competitiveness	46
5.3. Analysis of the results.....	48
5.4. Euro area exit	49
5.5. Creditor side measures.....	52
5.6. Fiscal transfers.....	53
6. Conclusion	54
7. Appendix: regression output.....	56
8. References	57

Master Thesis Proposal

Institute of Economic Studies
Faculty of Social Sciences
Charles University in Prague



Author:	Bc. Martin Šimunek	Supervisor:	Prof. Ing. Oldřich Dědek, CSc.
E-mail:	thorrmartin@gmail.com	E-mail:	dedek@fsv.cuni.cz
Phone:	731024585	Phone:	
Specialization:	Finance, Finanční trhy a bankovníctví	Defense Planned:	June 2014

Proposed Topic:

The Role of German Economic Policy in Shaping European Union and Eurozone

Topic Characteristics:

Since its unification in 1990, Germany rose to become prime European powerhouse in terms of economic strength. Built upon strong policies such as independence of the Central Bank, low inflation targeting or conservative domestic and government spending, the nation influenced the upcoming integration process culminating by Maastricht Treaty in 1992. This thesis will take a close look at German post-unification economic and political development in the years following Maastricht Treaty, as well as the nation's position towards European Union and Eurozone.

Large part of the development in the core of European Union post-Maastricht led to forming the monetary union. Assessing benefits and shortcomings of the integration process is beyond the scope of this thesis, albeit understanding of the built-in flaws (no corresponding fiscal union, Eurozone-wide banking supervision and other policies) is key in correct analyzing of the so-called Fiscal crisis from the years 2008-2009, which is still being resolved.

It will be argued that the actual problem is not one of sovereign debt, but a problem of banking sectors throughout Eurozone and Balance of Payments asymmetry between the member states of the monetary union. The latter will be the main topic of importance, as it has great impact on future stability and prosperity of the union. This thesis aims for identifying the reasons of the disbalances, evaluating the countermeasures already taken in order to solve the ongoing crisis in terms of effectiveness in decreasing intra-Euro Balance of Payments asymmetries and proposing future possibilities of dealing with this problem. The center of this is logically the biggest Eurozone country Germany, and study of its role in the matter will be of prime importance.

Hypotheses:

This thesis will examine the impact of German policies, economic and political values on the integration process and fundamental economic system in European Union. The data gathered will be used to argue if the current Eurozone-wide policy measures are positively or negatively affecting the Balance of Payments crisis in both debtor and creditor countries.

1. Long-term wage change is tied to productivity change in Germany, as opposed to other Eurozone countries
2. Austerity measures solve the Balance of Payments problem in debtor economies
3. There is lack of significant correction done to decrease the internal Balance of Payments disbalances since the start of the crisis by the creditor countries

Methodology:

The first half of the thesis contains analysis of German and later European-wide development post-

Maastricht treaty. Assessment of German fiscal and Balance of Payments position will be done by using data on wage inflation and growth of productivity, net export, GDP, and others paired with the underlying legislative changes. The corresponding data will be plotted for the Eurozone as a whole in the second chapter.

Robust underlying data analysis done in first half of the thesis will allow us to describe and assess the ongoing Balance of Payment crisis in Eurozone from its roots. The key part of the thesis will lay in evaluating the success of implementing current fiscal austerity measures on decreasing Balance of Payments asymmetries, the role of German economy and economic policies in creating and, more importantly, dissolving these asymmetries. The thesis will be concluded by presenting possible range of future policy strategies and their impact on the Balance of Payments asymmetry problem, with respect to German interests as well as the interests of EU and Eurozone.

Outline:

In the first half of the thesis I examine the root causes for the growing disparity between Germany and rest of the European union, which are mostly reflected in current Balance of Payments asymmetries. The second half debates this problem and its solutions.

1. Introduction and motivation
2. Germany from reunification to crisis
3. Maastricht Treaty and Post-Maastricht EU and Eurozone economic development
4. Eurozone-wide Balance of Payments crisis
5. Applied and potential Balance of Payments policy measures
6. Conclusion

Core Bibliography:

Boltho, A., Eichengreen, B. (2008), The Economic Impact of European Integration
Bastasin, C. (2013), German: A Global Miracle and a European Challenge
Staal, E.R. (1999), European Monetary Union: The German Political-Economic Trilemma
Krieger-Boden, C., Soltweder, R. (2010), European Economic Integration in Econometric Modelling – Concepts, Measures and Illustration
Sarrazin, T. (2012), Europa Braucht den Euro Nicht
Bibow, J. (2012), The Euro Debt Crisis and Germany's Euro Trilemma

Author

Supervisor

1. Introduction and motivation

Federal Republic of Germany is the largest European economy. From this position, the undertaken economic policies and stances, aimed at the home markets, create automatic response in other connected European countries. The nation's opinions on European-wide topics are those with the highest relevancy and strength. With the ever tighter integration between economies, this fact is only becoming more and more important. It is therefore of high importance to understand how the transmission inside Eurozone and European Union works in order to attain more appropriate measures and improve the evaluation of future policies.

The aim of the thesis is to quantify whether the severe austerity measures, undertaken in countries under financial strain like Greece, Portugal, Ireland, Spain, or others, are effective in countering the causes of the crisis. The causes are complexly assessed through a combination of data and economic policy analysis. Economic data are presented for key macroeconomic indicators for both internal German economy and European Union, and policies undertaken on both levels are interpreted in light of these. The efficiency of the austerity measures applied in debtor countries will be quantified through panel data regression, and these are represented by a change in overall consumption and capital formation elements of general government expenditures for the respective countries.

In the opening chapter, the thesis aims at internal political and economic situation in Germany since the start of the reunification process. We follow through all the important measures undertaken since, provided with underlying data analysis of the German economy at the time, containing the anti-inflationary policies of 1990s, employment reforms of Hartz committee in the first half of 21st century and contra-recession measures during the global crisis of 2008-2009. Simultaneously, second chapter maps the deepening of European integration into European Union and later Eurozone. The creation of monetary union is a significant milestone in the process with game-changing aspects on cooperation between European nations on several levels. Using the outcomes of both previous chapters, we get a picture of the situation on the verge of global crisis. Third chapter focuses on showcasing the balance of payments problem present in current Eurozone through analysis of competitiveness and productivity of European countries and thus shows the real cause of the Eurozone crisis. In the last chapter, this thesis quantifies the effect of austerity measures undertaken by the debtor countries on unit labour cost using fixed effects model regression. Furthermore, it analyses other possible policies and assesses their effectiveness and potential complementary function to the already applied policies.

2 Germany from reunification to global crisis

In the opening chapter we will take a close look at German post-unification economic policymaking. The unification process was a defining milestone for much of the economic decision-making after 1990, creating a specific set of problems especially in labour market, together with the need to hold the Maastricht Treaty and the criteria set by it. Both will be shortly visited in the first section, followed by analysis of important German indicators since reunification up till present, including GDP, consumer price index, and other.

Emphasis will be put on unemployment and wage development in the observed period and with the policies undertaken, in the third and fourth section, respectively. The main point of interest will of course be the Hartz I-IV reforms and their immediate, as well as crisis-time impact on an unemployment rate development, and on the (missing) wage inflation and productivity that is argued to be one of the reasons for the intra-Euro imbalances.

2.1. German reunification, Maastricht Treaty and their implications

Late 1989 was a starting point of a quick Soviet Block deterioration, including the then-called German Democratic Republic (East Germany). After the fall of the regime in November, instant contact was established with its counterpart Federal Republic of Germany (West Germany), with the West German chancellor Helmut Kohl announcing a 10-point program of increased cooperation and possible future reunification shortly after the fall of Berlin Wall.

After the dismissal of the ruling Socialist Unity Party of Germany in elections in March 1990, there was a huge call for a speedy reunification process from the East German population. Following a huge downfall of East German economy and social state in the start of the year leading to high inflation, unemployment, and massive flight of East Germans to West Germany caused by non-competitiveness of local economy, a Monetary, Economic and Social Union treaty was signed on May 18, in order to stabilize the economy.

The formal unification faced various external (German-Polish border and territorial claims, Soviet Army stationed in East Germany, unified Germany and its membership in NATO) and internal problems (reestablishment of five states in East Germany - Neue Länder, status of Berlin, tied with question of capital locations, election law and power distribution in the unified federation, and others). Hastened by the East German economic and social instability, with the added possibility of change in Soviet stance to the situation, most of these issues were quickly resolved and the reunification process was completed by October 3, 1990 by joining the five new states to the Federal Republic of Germany.

By adding the East Germany to the federation, the population of Germany increased by slightly more than a quarter and the GDP of East Germany was approximately 10% of Western in time of unification¹. Inferring from these numbers, addition of the five Neue Länder was not such a huge balance-changing act from the point of West German view, but it led to widespread fear of renewed German hegemony in Europe, especially in France and Great Britain.

The reunification occurred in the middle of a much greater integration effort - since late 1980s, a new push for creation of Economic and Monetary Union was in motion, spearheaded by French president Francois Mitterrand. The high point of economic cooperation at that point in time was European Monetary System (1978), which translated mainly into the creation of European exchange rate mechanism (ERM). This was a system of fixed exchange rates with only small possible fluctuations around the agreed rate, set at 2.25 percent.

Since the launch of the mechanism, there has been a significant decline in inflation and general economic instability, and in this regard it could be marked as successful. On the other hand, the fixed rate regime in combination with a very strong position of German Bundesbank in its monetary policy - thanks to the economic stability and power of West Germany - meant that other central banks had to follow the monetary policies undertaken by Bundesbank or risk breaking the boundaries of fixed rate regime. This resulted in no pressure on German central bank to take other ERM countries' policy requirements into account and was able to force them into applying counter-effective strategies. Vision of European monetary union with European-wide central bank and unified monetary policy was thus the top agenda of most members of the European Community. Even though Germany and Bundesbank were reluctant to the transferring of an important part of their sovereignty, they allowed for the establishment of Delors committee, which came out with a three-stage plan of creating the EMU in the beginning of 1989.

The outcome of EMU plans and the position of Germany on that matter would have been very much questionable, if not for the fall of Berlin Wall and the push for reunification. These events were a game-changer for the European diplomacy and general balance, and what was once meant to be a way to tame German economic hegemony turned to be one of the only options to ensure irreversible German cooperation in the European Community. Thus, to the great dismay of the Bundesbank, a smooth reunification process in Germany traded for the promise of quick and deep integration - the creation of Economic and Monetary Union.

¹ Source: Destatis.com, own calculations

Contents of Maastricht Treaty, sealing the deal on the integration path to EMU with exact timetable, are well known - establishment of the European Union, increase in non-economic cooperation (e.g. law or foreign policy segments) and the most famous "Maastricht criteria", which set benchmarks for countries entering the Eurozone. Economic impacts of these on European Community will be assessed in second chapter of the thesis. Both the unification of Germany and Maastricht treaty created boundaries for German (but also for others, as we will see in the second chapter) policymaking for the next two decades, turning the country's concentration onto internal economic turmoil. We will look on the development in these circumstances in the rest of this chapter.

2.2. Performance analysis of German economy

First we will comment on the state of West German economy right before the reunification. In Figure 1 we can see GDP growth, relative debt level, fiscal position and consumer price index for West Germany during immediate pre-unification era (1986-1990).

	GDP growth (%)	Debt (%)	Fiscal surplus/deficit (%)	CPI (%)
1986	2,3	39,2	-1,15	-0,1
1987	1,4	40,5	-1,81	0,2
1988	3,7	40,9	-1,98	1,3
1989	3,9	39,4	0,08	2,8
1990	5,3	41,0	-1,89	2,7

Figure1: Characteristics of West German economy pre-unification. Source: destatis.com, oecd.org, bundesbank.de

Apparent from the data is relatively very good state of the West German economy: GDP growth in 1989 reaching almost 4% (after recession of 1982, the highest in the decade), with relative government debt level holding around the 40 percent level and the deficits under 2% (even reaching to surplus in 1989). The inflation presented by CPI is very low in the middle 1980s, increasing in 1989 and 1990 slightly over the German long-term trend of 2% inflation. This can be at least partially attributed to the lifting of iron curtain and subsequent movement of East German population to FRG.

Looking at the post-unification GDP growth presented in Figure 2, we can see the growth immediately plummeting down to 0-2% range after 1991. This is often accounted to the burden of imminent social and economic transfers flowing between West and East Germany. As will be pointed out in the next paragraphs, the lion's share of the contraction can be also credited to strict budgetary and monetary policy implemented by Bundesbank and German government. The growth in the period of late 1990s and the first half of 2000s can only be labelled as mild, as it only increased over the 2% rate in the peaks of the Internet bubble in 2000 and in the rally before global crisis in 2006-

2007, more so in the comparison to the growth of other big economies (USA, GB), and the growth of smaller European economies, including post-Soviet ones, reached to multiples of the German.

Negative growth following the outbreak of Euro crisis in late 2008/early 2009, although reaching high negative value(-5%), was rather quickly reversed and positive growth is persisting up till present. Even though 2010/11 values are not differencing from the pre-crisis ones, the environment in which they are attained is completely different. If in early 2000s was the country dubbed "The Sick man of the Euro", holding one of the slowest growth rates in the monetary union, in the present it is on the contrary the country with the huge growth momentum and stability in comparison to the rest of the European Union.

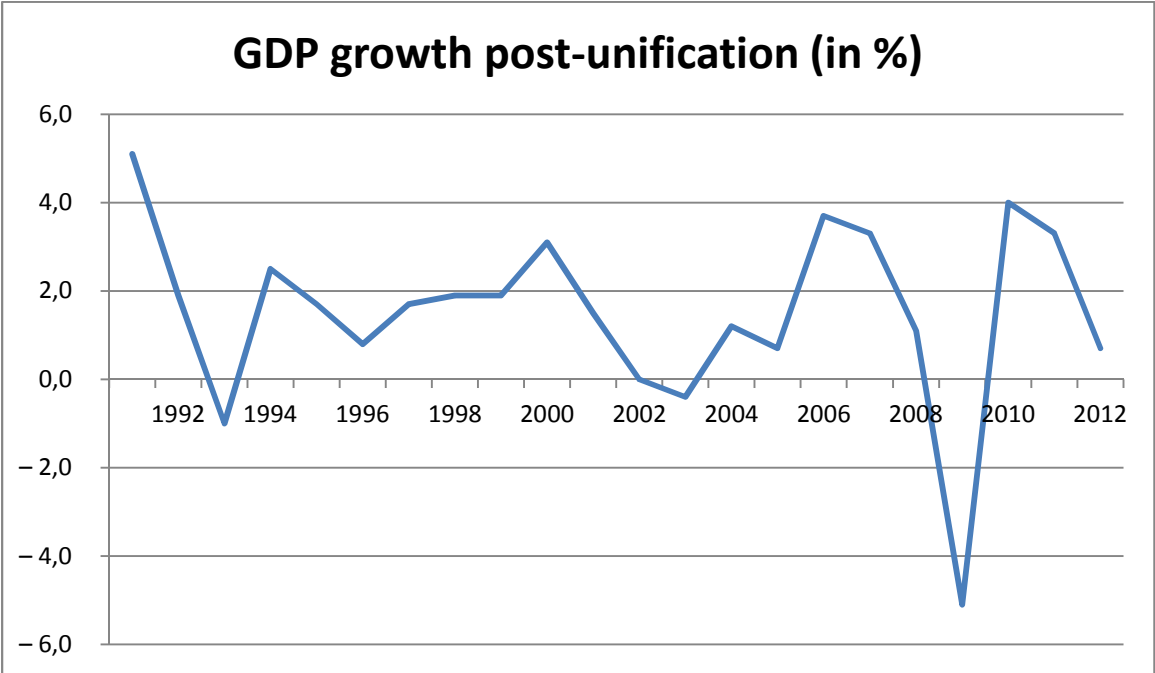


Figure 2 : Seasonally adjusted GDP growth of Germany post-unification, growth as a % of change on the last year, Source: Destatis.com

Next we follow our analysis with the inflation indicator - consumer price index, as shown in table 3. The risk of high inflation as an impact of the country's merger was high in the eyes of Bundesbank. Indeed, since 1990 the CPI overshoot the 2% target by quite a margin. Being one of the highest valued German traditions, low inflation as the sole important policy carried out at all costs, it motivated most of the economic policy and economy performance in the decade after reunion. At the time, Bundesbank's influence far outstretched the area of monetary policy, creating a pressure on the fiscal authorities to take up strict monetary policy (as has been seen in the previous chapter,

its influence through government even affected European decision-making process, like the EMU one). Subsequent diminishing of the inflation rate of 5% in 1992 took several years.

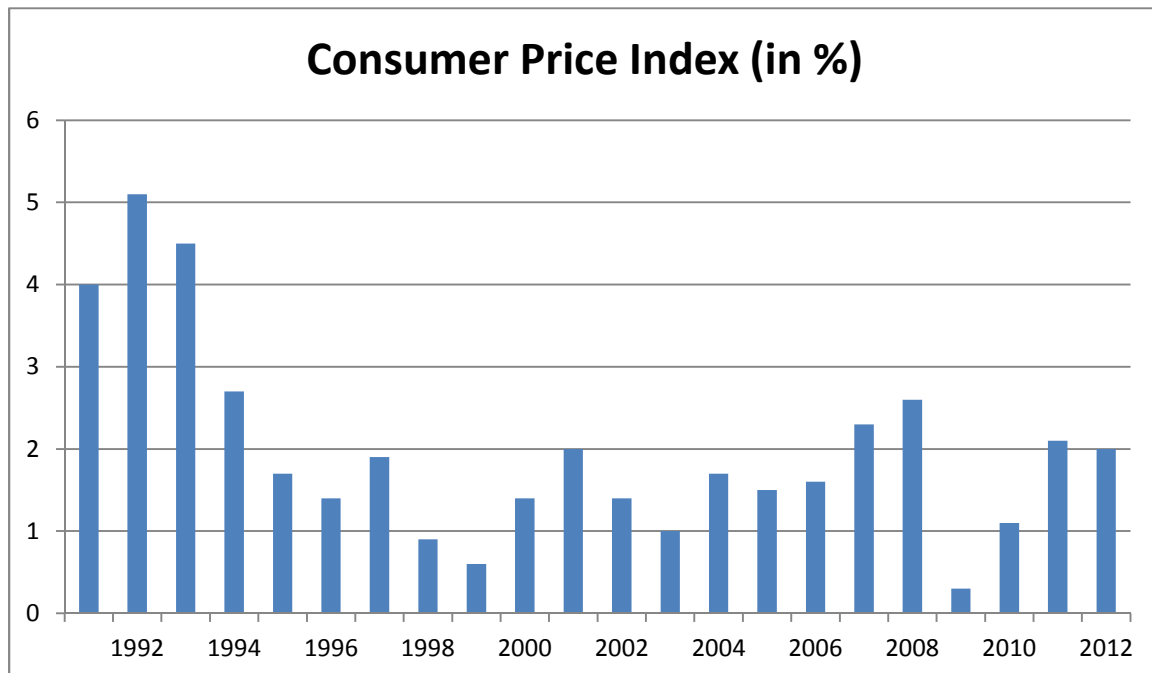


Figure 3: annual Consumer Price Index, Source: oecd.org, Bundesbank.de

After 1995, the annual values oscillated well under 2%, breaking the mark only in the boom before the global bust. Almost nonexistent inflation in the crisis year of 2009 is to be expected seeing the dampening of economic activity showcased by other variables. A return to economic growth in the last three years has led to the reappearance of steady inflation on the 2% mark. It is important to mention the fact that after 2000, much of the monetary policy rights (emission of money, interest rates) have transferred to European Central Bank, on account of the creation of Economic and Monetary union. It is therefore very interesting to note that the policies conducted by ECB since the start of the crisis (such as LTRO and others, we will touch these later in the text) - intended to help mainly the most affected economies - does not have any significant inflationary impact on the stronger economies to date.

As has been shown in the opening figure of the section, the last West German government budget ended with a token surplus (+0,08%). The immediate impact of the reunification increased the deficit by roughly 3% GDP annually. Yearly gross transfer cost from West to East was estimated at 180 billion Deutsche Mark (90 billion euro) by German Finance Ministry. Reduced tax revenues in East Germany decreased the amount to 120-140 billion DM². Due to fiscal multiplier indirect benefits to

²Bibow, 2003

the economy, the financing need (or net cost) for the social and economic transfers should be significantly smaller.

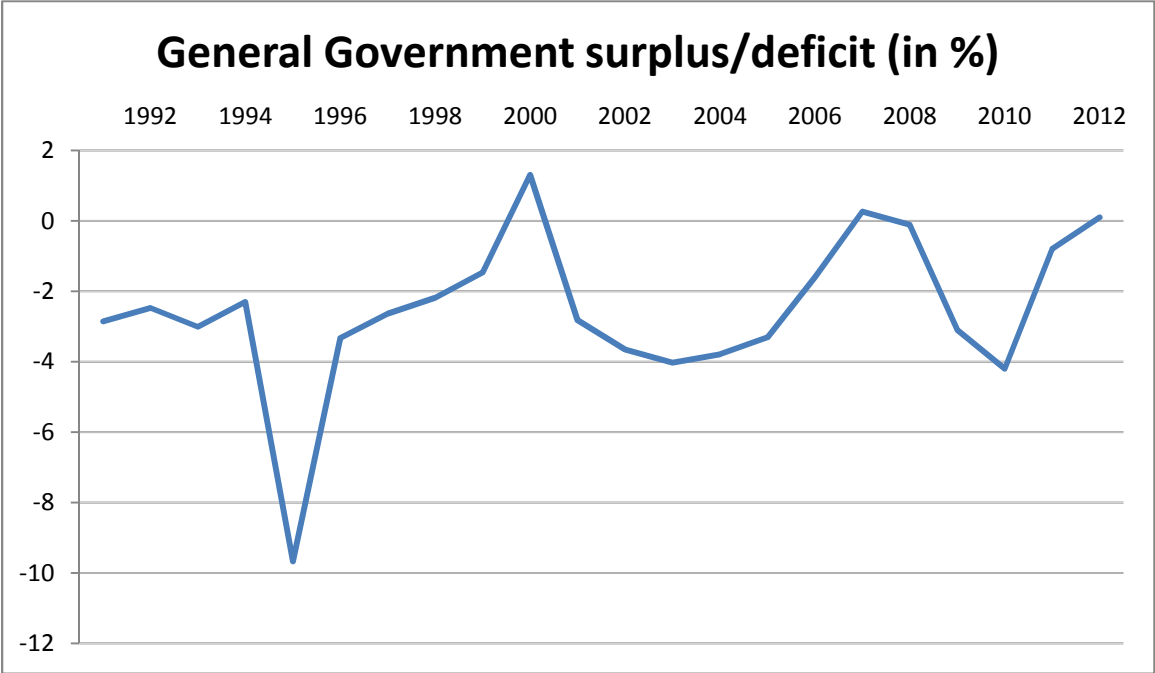


Figure 4: General government surplus/deficit ratio in %, Source: oecd.org, eurostat.com

Under the motion to hold the inflation level low, the Bundesbank applied strict monetary policy (keeping real market interest rate at 5-6% after 1991) and also pushed for more strict fiscal policy, arguing that the price paid for West-East transfers should not be financed only through debt increase. According to Heilemann and Rappen (1997), by the end of 1995, the increase in tax revenues (3% GDP increase between 1992 and 1995³) combined with expenditure cuts created more budget savings than the financial needs for the transfers. Still, the deficit shrunk only by 0,3% until 1997 to 2,6%. At least a part of the high inflation can be attributed to the tax increase between 1992-1995, and together with the austerity measures, they took its toll on the GDP development in the observed time.

The result of the deficit and GDP development was a sharp rise from the 40% mark at the time of unification to the 60% levels set by the Maastricht Treaty as the ceiling level for the entry to the Eurozone, as can be seen in figure 5. The criterion was fulfilled also thanks to the Internet bubble boosting both growth and the budget balance, but following its burst, the budget fell even lower under the 3% deficit-to-GDP ratio for several years in the first half of 2000s. Germany was the one of

³ Source: oecd.org

the first countries to break the Stability and Growth Pact, famously colluding with France and avoiding the repercussions of European Committee mechanism.

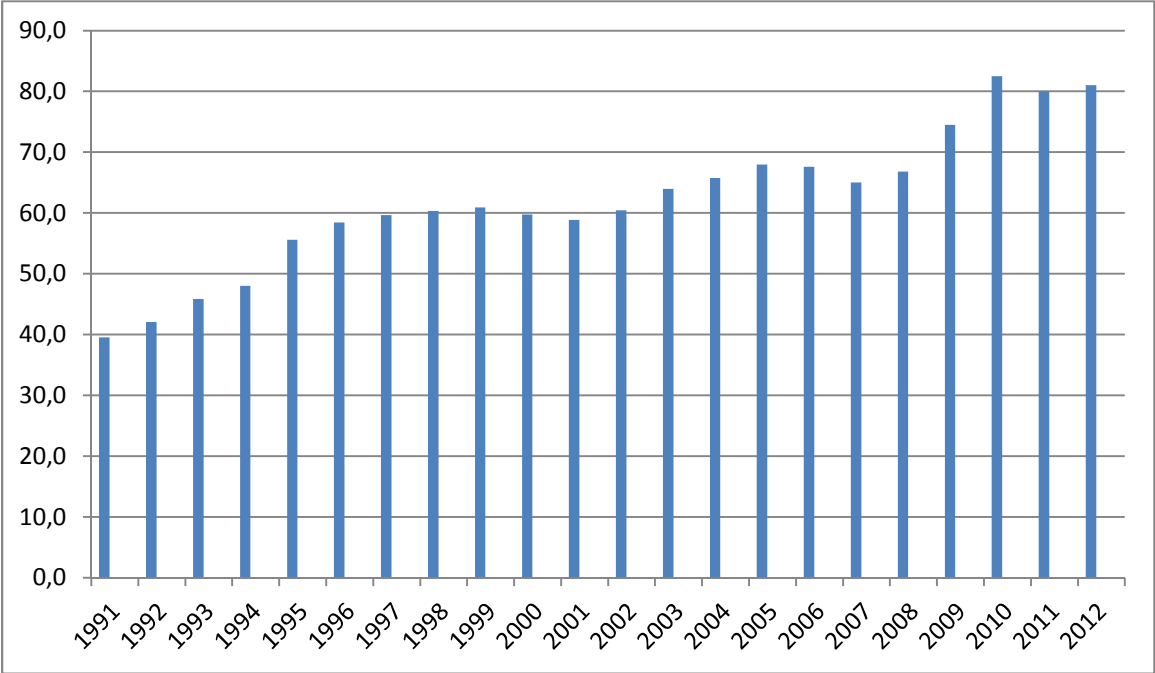


Figure 5: Debt-to-GDP ratio development post-reunification, Source: oecd.org

In the 2006-2007's boom the overall German debt ratio dipped again back to the 60% boundary, but during the crisis the level of debt jumped over 80%, albeit very strong recovery both in growth and budget balance in the last years helped to diminish the relative value of the government debt. At the present moment, unassuming external influences and from the data available, Germany is on a good track to a sustainable growth path.

To sum up the last section: we visited the most important national indicators in the observed term, GDP, CPI and budget development, and analyzed both the monetary and fiscal policies in the 1990s. These were based on the fear of growing inflation rate post-unification and meant tightening of both. It is of course improbable that the 4-5% growth attained during 1989-1992 would be held for the whole decade, but since there were no shocks tied with the reunification left, by the computational logic of relative debt-to-GDP ratio it is well possible that the outcome of a less strict policy together with higher growth would not be different in the end (towards 60% debt ratio). At any rate, the evaluation of success and propriety of the usage of aforementioned policies differs substantially, ranging from being deemed as necessary, to being a very costly mistake. In my opinion, the policy was held a bit too strict and a bit too long (even in 1997, with inflation well under 2%, the Bundesbank ran a tight money policy), but it is hardly not understandable given the historical experience.

2.3. Unemployment and Hartz reform

One of the core indicators not mentioned in the previous analysis is unemployment. Significance of this problem in Germany and the social and economic policies tied with it warrants this topic its own section. Underperformance of the labour market in the East Germany is one of the main reasons for still-flowing net transfers from West to East.

Before the fall of Iron Curtain, there was no official unemployment. The demise of the regime and immediate exposure of the unprepared economy to the capitalistic world quickly led to crumbling of enterprises and spiking unemployment in the first years, as we can see in figure 6. Where long-term West German unemployment rate tallied at around 6-7%, its counterpart swiftly opened a gap. The increase in amount of unemployed in Neue Länder is undershoot by the data presented, as high percentage of population migrated to former FRG states in search of better place for work and living. The migration happened in two waves - hasty run "to freedom" shortly after the dissolution of the latter government, taking almost 4% of the population, which calmed down after the reunification (with one of the reasons being quick shortening of real wage gap due to transfers).

The slower, but much more persistent second wave came in 1997, with GDP growth of the East Germany halting to positive zero and again spiking unemployment. In sharp difference stood the development in the west: positive growth and decreasing unemployment back under 10%. The highest unemployment gap between the two parts of the single country was to be seen in the first years of the new millennium, eastern reaching more than twofold of the western one.

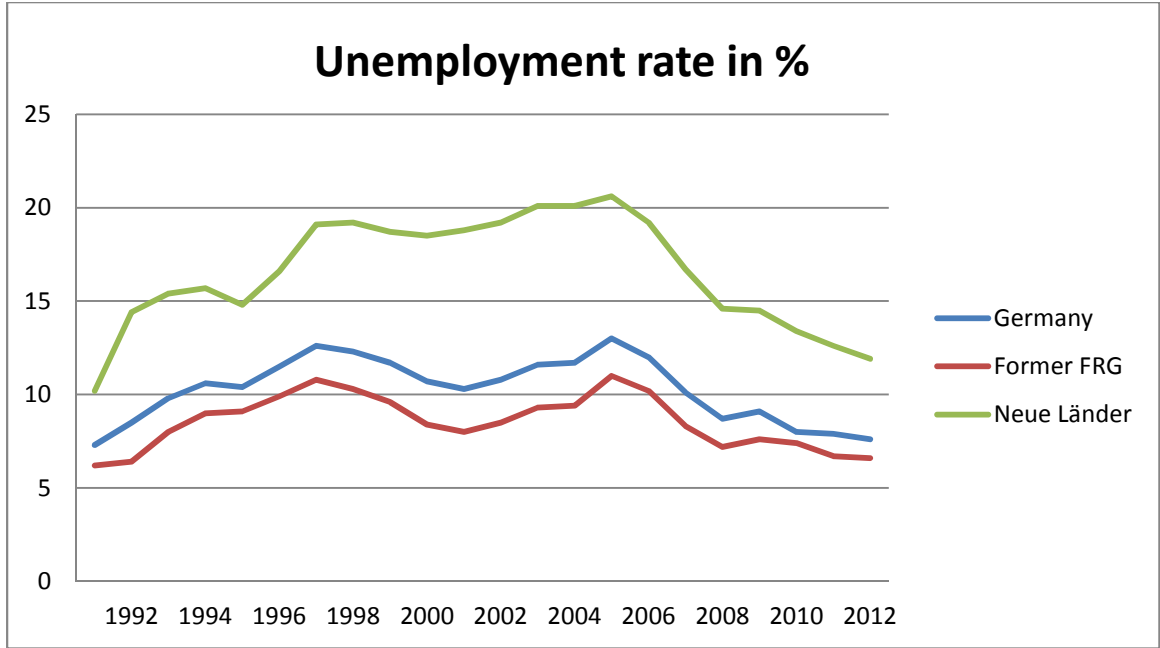


Figure 6: Unemployment rate in %, Former FRG and Neue Länder are subparts of Germany, Source: Destasis.com

Overall unemployment in Germany peaked again in 2005 in a situation of sluggish growth and high persistent budget deficits (as seen in the previous subchapter). Nevertheless, in the following years unemployment started a sharp downward trend in all parts of the country, which persisted even through the crisis. The famous Hartz I-IV reforms of labour market warrant a lion's share of that situation. The set of reforms is named after the head of Commission for Modern Labour Market Services, Peter Hartz. The commission came out with some radical changes to the concept of labour market policies.

Before the changes to the system, German passive labour policy was spearheaded by unemployment benefit policy that granted the unemployed up to 67% of their last income. The longevity of the payment varied according to the age and time spent at work, but on the expiry of the benefit, the jobless worker was still granted an infinite unemployment assistance of up to 53% of his last income. Coupled with social benefits for households under certain income threshold, there was little motivation for the low-skilled part of population to try and change their unemployed status. On the active policy side, publicly created jobs and retraining of the unemployed played major role.

One of the goals of the reform can be formulated as improvement of the job search efficiency and overall effectiveness of the system. This bucket of changes contained remodelling of organizational structure of employment agencies, requiring the accomplishment of given targets, and their function in consulting and counselling has been greatly expanded. It allowed for an individual assessment of clients in order to improve the chances of successful job search and also introduction of competition through vouchers (every client of a private employment counselling provider is paying with a provided voucher which is then cashed upon search success by the counsellor).

The second area of change was the key to the spirit of Hartz reforms: activating the unemployed. While in the previous system the proper incentives to seek jobs were lacking and the unemployment assistance was infinitely long, post-Hartz unemployment benefits (that are computed from previous income) are tied to the ability and will to work and their payment time was shortened. Social benefits and unemployment assistance were merged and created a backup system for the long-term unemployed. To better control the activity of the participant, the employment agencies were given the option of sanction application.

Part of the great success of the reform was based on the Mini- and Midi- jobs defining and their efficiency in zero or lowered social security contributions, respectively. Different forms of subsidies paid out to employers for employing special (e.g. older) groups of workers were modified or set up. This created a low amount of income increase that is untaxed and not only limited to the unemployed (most of the time, the social security tax-free minijobs are used as a low level income

"overtime jobs" for one to two hours daily after regular work to increase the regular income). The reform also contained some degree of deregulation of the labour market. Following the Hartz reforms, in 2006 a set of rules and incentives also specifically targeted the older workers while simultaneously cut their ability to leave for early pension.

Effect of the applied reforms after 2005 is sound: major and lasting decrease in unemployment of jobless, affecting the whole spectrum of the labour market. According to OECD, the non-accelerating inflation rate of unemployment (NAIRU) for Germany dropped from its peak of 8,32% in 2005 consistently by 0,1-0,2% per year down to 7,14% in 2012, even through crisis. It is the first drop of this indicator since steady growth after the reunification. Positive trend in employment also helped to reduce the aforementioned public deficit present in mid-2000s.

The strength of the measures applied was proven during the recession year of 2009. While we can see a sharp growth slump, accompanied by great increase in public debt, the unemployment almost did not react (0,2% increase in unemployment rate in 2009). Much of this can be ascribed to the labour market policy change undertaken in 2002-2005. While in other countries of the European Union (and the rest of the world) unemployment spiked significantly and persisted for a long time - up till present in fact - in Germany most of the slump was absorbed by moving of full time workers temporarily into shorter work contracts, allowing for a part of their income to remain and avoiding the necessity of their fall into the safe net of social benefits (which would have lead to increase of long-term government expenditures). At the highest point, employers used the opportunity to shorten the working time of more than 1,5 million workers. Rather interestingly, the amount of short time work contracts declined back to its pre-crisis levels as quickly as it spiked. Ever since 2009, the unemployment steadily drops and it is the engine of growth of the country even through the ongoing economic problems in Eurozone.

In this subchapter, we have analyzed the main economic and social policies applied in the first half of the first decade of 21th century. Unlike the policies adopted after the reunification, where their success level and justification ranges significantly, the Hartz reforms have been accepted broadly as the reason for the "new German economic miracle". For some, these were in fact a bit too successful, as they are being given credit for real wage devaluation. This fact will be examined in the next section.

2.4. Fiscal policies during the crisis and onward

In this last subchapter, we will briefly touch the measures taken in response to the abrupt 2008-2009 global crisis. Overall, the crisis hit the countries of European Union relatively hard, not avoiding even

the greatest of economies, broadcasting differences between the economic health of the countries. The divergent trends and responses taken and their evaluation are the main goal of this thesis and will be dissected later in the text. For now, we will take a look at intra-economic measures taken to mitigate the imminent impact of the crisis.

The first rescue "mission" was banking sector, heavily invested in American derivatives, mainly CDO's. The reason for this was an overabundance of capital and no local investment opportunities with interest rates high enough, as the profitability of banking sector in Germany is very low in long-term due to a high competition - along big banking houses there is a plethora of Landesbanken and small local savings banks. Interestingly, serious part of German banking system's exposition to the structured securities was allocated in Landesbanken. This was due to a change in policy, ending the possibility of Landesbanken to issue debt under government guarantees, which they used to full extent before the deadline. Money raised up this way ended in high-yield but high-risk mortgage-based securities mentioned earlier. The total write-downs on these toxic securities were up to 230 billion Euro in value between the years 2007-2009.

The public banks too were in need of a government bailout, namely HVP and partially Commerzbank. Immediately after the fall of Lehman Brothers in September 2008, the volatility of the financial markets together with little access to cheap liquidity brought quick action from the government in form of a bailout fund, granting 400 billion Euro in guarantees and 70 billion Euro for recapitalization of banks. There was also a bad-asset special purpose vehicle created to help the balances of banks, but saw only limited use.

There were two packages of help for labour market and industry. The first, smaller one, in November 2008, and the second one, much greater in February 2009. They targeted different temporary tax cuts in order to increase demand and decrease the costs of employment, raised public investment budget, further subsidized short work contracts to decrease the amount of dismissals and through Development Loan Corporation (KfW) procured guarantees and liquidity to big industry companies as well as small and medium enterprises. Interesting stimulus to a specific demand was the scrapping program.

Thanks to these stimuli the unemployment and growth drops were stabilized or decreased, although at a price of increased overall debt (exceeding 80% in 2010). Present and close future economic policies concentrate on continuous public debt decrease while maintaining and strengthening growth and employment. To this goal, a balanced-budget amendment has been added to Basic Law forbidding the central government, as well as Länder, from creating structural deficit after 2016. Long-term goals of economic policies will have to attend to quickly ageing population and come up

with measures to fight the trend. But for now, the position of the country in European Union and Eurozone is stronger and more stabilized than ever.

3. Maastricht Treaty and Post-Maastricht EU and Eurozone economic development

In this chapter we will focus our analysis on the situation in the whole European Union, searching for German influence on European-wide decision-making process. The important topics are the formation of the Eurozone and its institutions, opening the European Union to the new countries, and the economic background of the last two decades in terms of global policies adopted in EU.

3.1. Maastricht revisited

The motor behind the post-war unification process in Western Europe was the idea of economically tied zone, allowing the participating states to cooperate and mutually benefit from this cooperation. Although there were no differences to this philosophy between the countries, there were severe discrepancies on how the final community would look like.

Despite the differences, it was agreed that stability and growth in Europe would be strengthened by creation of monetary system, disallowing the participating countries in using beggar-thy-neighbor policies such as currency depreciation. While the first attempt at creating such system failed in the instability of the first half of 1970s, in 1984 Europe saw the creation of European Monetary System, spearheaded by both largest states of the European Community. The most important application of the system was the Exchange Rate Mechanism, which set internal exchange rates and enabled only small fluctuation for these (2,25%).

The for the rest of the decade, countries of Europe enjoyed unprecedented stability, low unemployment and strong growth. Although the economic situation in the rest of the developed world noted some similar improvements (Japan, USA), there is little doubt that at least partially ERM was of benefit. On the other hand, smaller countries participating in EMS quickly came to realize that their monetary policies were very dependent on the monetary and economic powerhouse that is Germany. Even French Central Bank and government had to restrain themselves in order to hold the exchange rates set by ERM. What followed was a situation where Bundesbank's policymakers reacted to the development in Germany, but their decision-making had severe consequences on the whole system.

Other countries lobbied for change in the system and implementation of a proper monetary union with a supranational central bank, whose decisions would apply more balanced approach (and in reality, much less strict than the one of Bundesbank). Of course, the idea of losing sovereignty over monetary policy was alienating to Germany and its central bankers. Nevertheless, it would be politically unwise to dismiss the proposal for Economic and Monetary Union straight away, so

Germany reluctantly agreed to create a committee for this matter. Led by Delors, the committee created a three-phased plan on how to set up the EMU. It is entirely possible that the Eurozone would not exist today, had there been no abrupt dissolution of the Eastern bloc, as there was no real leverage forcing Germany to agree with it. Due to some tough diplomacy after the fall of Berlin Wall, as described in the first chapter, German reluctant 'yes' to EMU was considered as a mark of commitment to the European project.

Still, the country fought tooth and nail to oppose setting a firm timetable for the phases presented by Delors committee, hoping for a later change or suspension of the plan. While this have failed, Germany made it clear it would commit strictly to a pure monetary system with a central bank with role and competences very much like Bundesbank. The final treaty, establishing the EMU officially, was signed in 1992 in Maastricht. The treaty recognized the need for a great deal of convergence by the entering countries, and thus several relatively strict criteria were set: long term debt sustainability (represented by maximum 3% annual debt-to-GDP ratio and total government debt not higher than 60% of GDP), low inflation (inflation not higher than the average of the 3 lowest-inflation members + 1,5%), low interest rate (interest rate not higher than the average of the 3 lowest-interest rate members + 2%) and exchange rate stability (at least 2 years in ERM/ERM II). It also sets up a double-speed integration process - countries not passing these criteria will not be allowed to enter.

Shortly following the signing of the treaty, and amidst the process of approval in each country, the ERM mechanism came under heavy pressure. In September 1992, several countries were forced out of their set fluctuation zones by aggressive speculation (Great Britain, Italy). While there is no sole explanation to the imbalances that arose, a great deal can be attributed to German post-unification monetary and fiscal restriction policies adopted in 1992-1993 (as described in sections 2.2. and 2.3.). Other countries, such as Italy, also had their own set of internal fiscal problems and opted not to follow Germany into restrictive, deflationary policy. After Great Britain and Italy left the ERM, speculative attacks switched over to France. Both central banks of Germany and France tried to hold the pegged exchange rate, but later in 1993, the fluctuation rate in ERM was changed to 15%.

Despite the partial dissolution of the ERM in 1992/1993, the European Community proceeded with the plan to form Eurozone as it was agreed in Maastricht Treaty. The only real reflection of the ERM dissolution was the introduction of the Stability and Growth pact, which bounded the EMU-participating countries to hold fiscal deficits under control. While a thought in the right direction, there were no real consequences in breaking the rules of the SGP. No other measures were undertaken in order to control for real economic imbalances (other than governmental) in the performance of the regions. While the imbalances are a normal phenomenon, long-term

accumulation leads to a critical tipping point, where the monetary union based only on fixed exchange rates is no longer sustainable. We can see this pattern not only for the first EMS, it can be also shown on the Bretton-Woods system dissolution or the Asian crisis of 1997. The real hope was that attaining sensible fiscal policy would be enough to ensure the balanced growth for the newly-found union.

3.2. Creation of Eurozone and new countries

After the signing of the Maastricht Treaty, the integration process gained significant speed. In this subchapter, we will take a look at the key institution for the new EMU, the countries joining it (or refusing to), and the expansion of the European Union to the post-soviet states.

In 1994, European Monetary Institute was established, later succeeded by European Central Bank. Its role was to help future member states of the EMU to prepare for the introduction of single currency. ECB is one of the seven official European institutions, serving as the keeper of the euro currency for the whole monetary union. Its primary goal is to maintain price stability across the member states. This target, and the measures that were granted to the new institution, were very much based on the German style of independent, strong central bank. The target is attained by open market operations with financial institutions. However, the regulation of financial sector, while being a subject to European-wide rules (Basel standards), was being upheld by national central banks. Also, no clear authorization to be the lender of the last resort was given prior to the 2009 crisis.

Of the fifteen countries present then in European Union, ten entered the EMU on January 1st, 1999. Great Britain and Denmark negotiated an exception, and in 2001, Greece joined the club. This has, effectively, created a double-layered platform, where, due to several countries not participating in the monetary union, some of the policymaking process is done on the basis of the whole EU, while some intra-eurozone decisions are undertaken in smaller 'circle' of countries participating in the EMU. This has also been called a 'double speed' Europe, because of the different integration levels of members.

Each member country had to fulfil the aforementioned Maastricht criteria upon entering the Eurozone. In case of some, like Italy, Ireland or Belgium, restrictive measures had to be applied in order to meet the criteria, but at the end of the day, all states accomplished the set target (with the exception of cumulative government debt-to-GDP ratio, where the likes of Italy exceeded the boundary set at 60% by a huge margin). The last to join the club was Greece, two years later. It has been mostly a political decision to incorporate Greece, and several statistics presented, mainly the

government debt, were deceptive. Nevertheless, at that moment, everything seemed working well for the forming EMU.

In 2004, the largest expansion of the Union took place, with ten new, mostly post-soviet countries opted to join, with three more several years later. This vastly changed the landscape of the EU, with power in all institutions shifting and spreading to the new members. The new states were, and still to date are, significantly underdeveloped in regards to economic and social situation. The impact goes both ways - incentives on political, social and economic change in the new countries in the form of EU funds and investment channels, and new markets opening for the original members. It is not without its controversies, though. The policy of free trade, movement of capital and workforce applied by the Union, motivates labourers from the new countries to search for a better-paid job. While this has a positive effect on the country receiving the labour as per economic theory, the population in the regions affected by the work immigration often sees it differently (e.g. Great Britain). The new countries are also automatically obliged to join the Eurozone, which now has eighteen participating members.

3.3. Economic development of European countries post-Maastricht

We will now turn our attention from the political and institutional aspect to the economic one. As in the first chapter, we will observe the main economic indicators for the last two decades. The Maastricht Treaty and the necessity to fulfill the criteria, as well as the Stability and Growth Pact, incentivized the governments to change national fiscal and social policies.

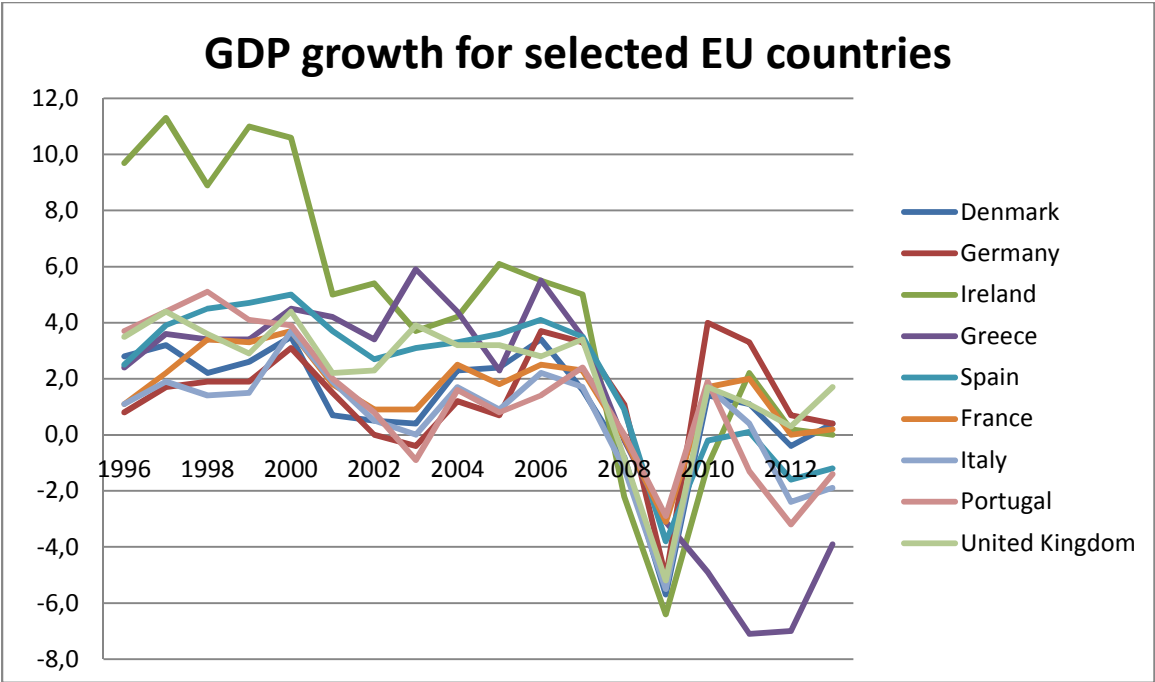


Figure 6: GDP growth for selected EU countries, source: Eurostat

The real gross domestic product growth figure above (for selected European Union countries) underlines how the region's business cycle became synchronized in the fifteen years before the 2009 crisis. Except outliers like Ireland, most of the 'old' European countries' GDP growth followed the same pattern. We can see the greatest growth in periods before the 'Internet' crisis of 2000 and in the boom in 2006-2007. Notably, the countries with the above average growth before the crisis, like Spain, Greece, and Ireland, were ones of the most struck by the downturn. The reasons will be discussed later specifically, but they can be attributed largely to bubbles on the different internal markets. As we can see, one country not that much synchronized with the rest is United Kingdom, which does not rely on trade and cooperation with other EU countries as much as the rest, with strong ties to the USA or its former colonies and also thanks to being one of the most important financial centres of the globe.

While no country really shines in its growth after the 2009, we can clearly see the divergences happening. While the northern core struggles for a positive growth, the countries of south (Spain, Greece, Portugal, Ireland) are still firmly in recession in 2013, although with signs of improvement. Still, the imbalances have not been mended yet.

As for the new countries entering European Union in 2004 or later (not presented in the figure), the better part of the first decade of 21st century was in the sign of tremendous growth. In 2009, the fall was sometimes greater for the new economies than for the old ones, but in the recovery the outer-euro countries come ahead at about 1% higher growth than the Eurozone.

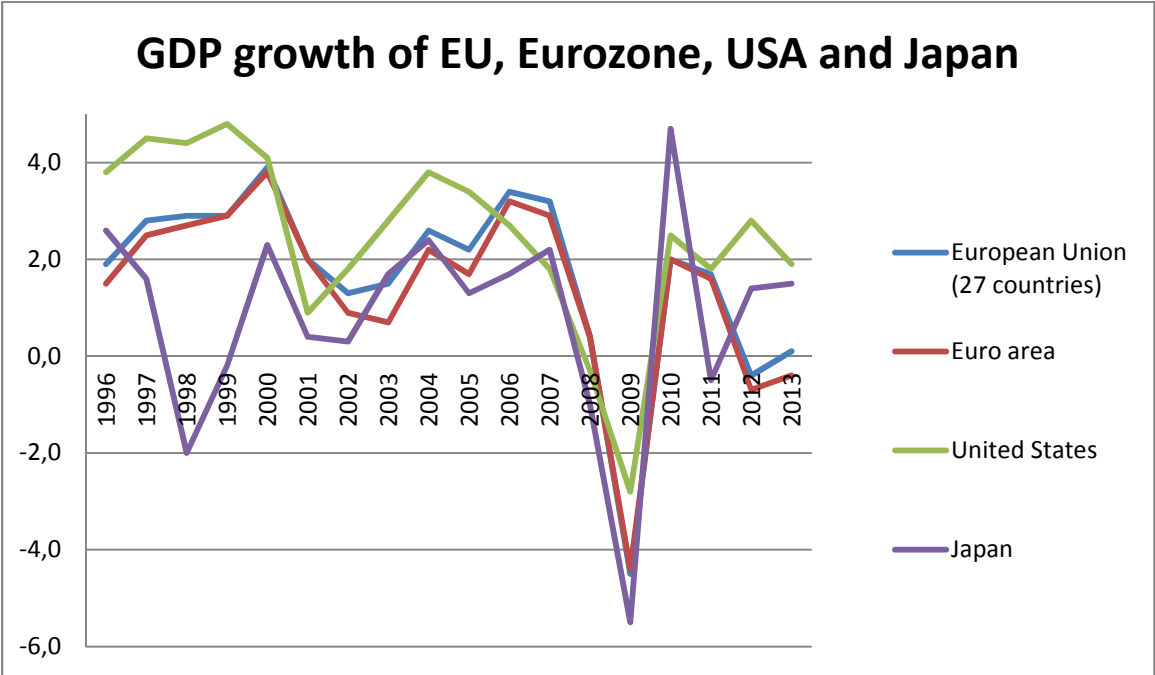


Figure 7: GDP growth of EU, Eurozone, USA and Japan, source: Eurostat

In comparing the Euro area, European Union and the two of the greatest economies US and Japan, we can see that long-term, the United States came ahead in growth both before and after the crisis. The differences between intra-euro and the whole EU27 area are almost nonexistent.

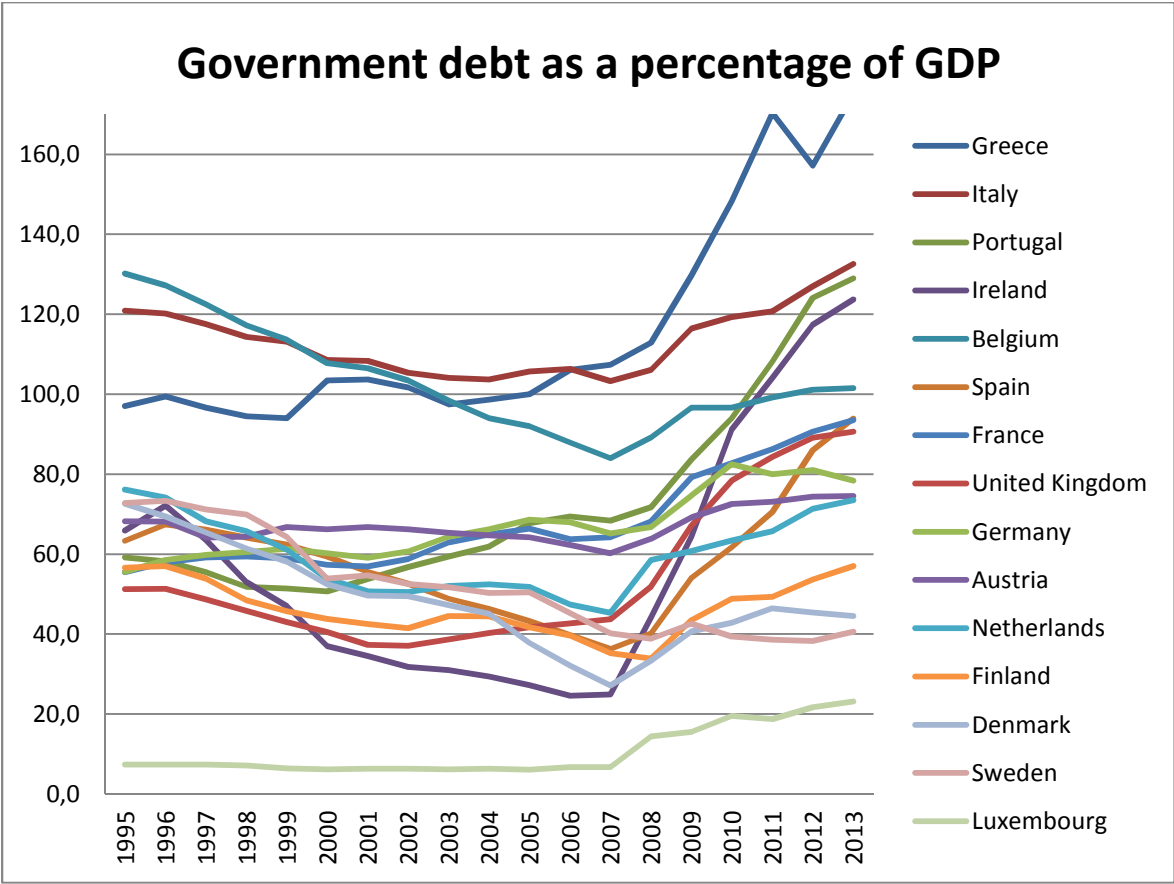


Figure 8: Government debt as percentage of GDP, source: Eurostat

Things get a bit more interesting in comparing the cumulative debt-to-GDP ratio of member countries, in this case of all 15 original countries. Right up to 2008, we can see a long-term decline in overall debt across several countries, like Belgium or Italy, with only a few real increases between 1994 and 2008 (most notably, Portugal, Germany and France). After the crisis, the debt level of literally every country increased substantially, with the sole exception of Sweden. While the shift averaged at about 20% for the whole union, the countries in deep problems, like Greece, Portugal, Ireland and Spain, increased their government debt high over the 100% boundary.

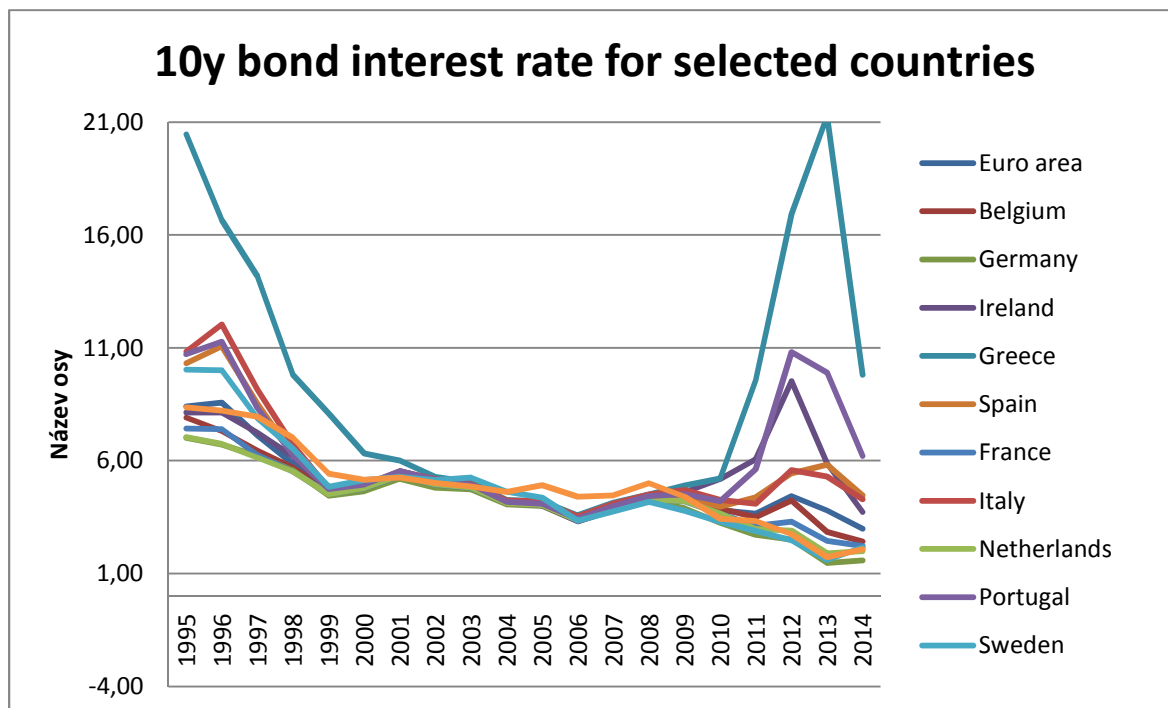


Figure 9: 10y bond interest rate (12 months rolling average, first month for each year) for selected EU countries, source: Eurostat

The evaluation of 10 year government bonds of European countries throughout the last two decades has been a rollercoaster. In the first half of the nineties, market value of bonds differed substantially, where Italian, Spanish or even Swedish bonds holding over 10% interest rate, Greece even being over the 20% mark. Nevertheless, these were well sustainable due to higher internal interest rates for these countries, as well as balanced out by the movement of exchange rates (e.g. Greece).

With the establishment of Eurozone, the participating states' rates converged towards the same value. The thinking behind the same evaluation of bonds for Germany, Luxembourg on one hand and Greece or Portugal on the other was that once inside the monetary area, the members would automatically support each other in case of economic shock (ironically, in the text of Maastricht Treaty, any direct bailout of a member country by the others is strictly forbidden). We can also notice the overall decline of interest rate over the observed time period, e.g. for Germany from 7% rate in 1995 down under 2% in 2014.

After the sovereignty debt crisis broke out in Greece, and much thanks to initial German and other European countries' stances towards Greece problem solutions, the market evaluation on European countries varied again. For some time between 2010 and 2012, there have been disputes over the persistence of euro in countries stricken by crisis, and high amount of uncertainty both increased the interest rates in these countries, as well as decreased the rates in states considered safe - like in Germany. In the last two years though, with some of the reforms applied to mend the Eurozone, and

several planned for the near future, there is no longer any immediate uncertainty of the Eurozone survivability. Despite the still fragile economies of south, their long-term interest rates have declined to sustainable values.

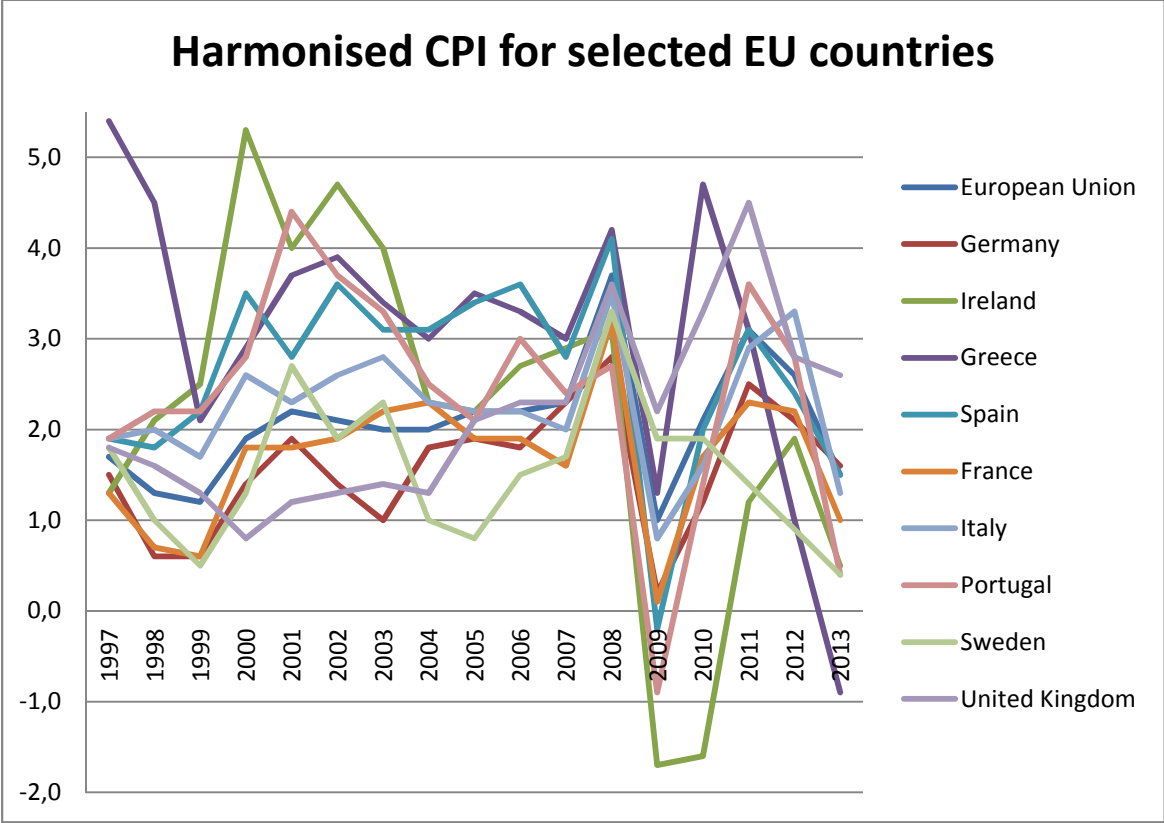


Figure 10: Harmonised CPI for selected EU countries, source: Eurostat

Figure 10 provides us with inflation metrics. Interestingly, in the year 1997, in which inflation was a key index for the countries entering Eurozone, all the entering countries were 'well behaved', with inflation ranging from 1% to slightly over 2%. After securing the entrance to the new monetary union though, the range of noted inflations in countries widened significantly. We can again note that the booming 'GIPS' countries like Greece, Ireland, Portugal and Spain are well above average in this criteria. Nevertheless, inflation rate almost evened out across the Eurozone countries, in the ramp-up to the crisis year. Currently, most of the EU countries are under the 2% inflation target, and the crisis-stricken ones well under, the Greece outlier being firmly in deflation. The range of inflation between Eurozone countries will be one of the discussed problems later in the thesis. As for the new countries, for most of them, their inflation rate was above average in the years prior to the crisis, and now holds around the 2% target with the rest of the European Union members.

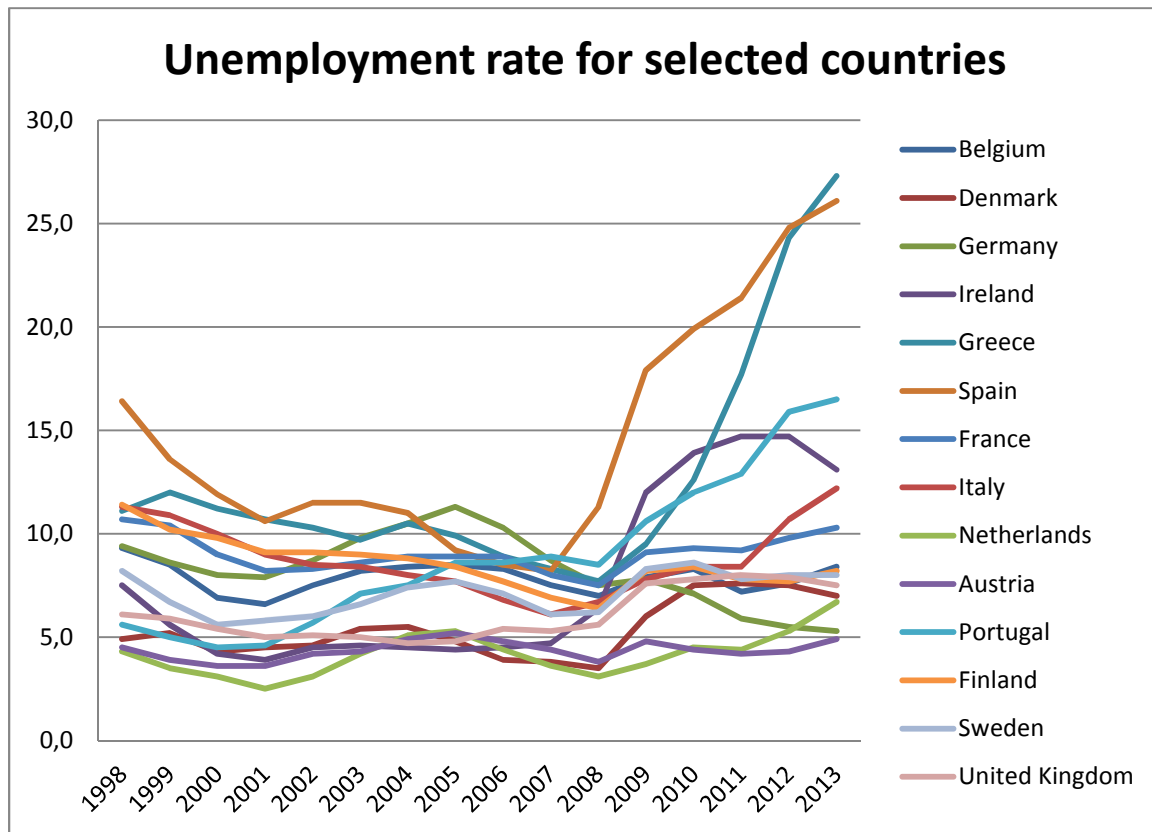


Figure 11: Unemployment rate for selected EU countries, source: Eurostat

The unemployment data are consistent with the previous presented figures. In the decade of relative prosperity and stability, all original European countries attained unemployment rate of under 10% by the year 2007. Interestingly, Germany was the worst of them between 2004-2006, in stark comparison to present situation. After the crisis, we see a huge spike of unemployment in the peripheral countries, completing the picture of this subchapter. Furthermore, two of the biggest economies in Europe, France and Italy, crossed the 10% unemployment rate in 2011 and 2012 respectively, and there seems to be no immediate change of the trend. As for the new post-communist countries, most of them entered the new century with very high unemployment (e.g. over 20% in Slovakia), and throughout the decade improved towards the 10% rate. Depending on the level of development by the country, we are looking at numbers ranging from 7,3% for Czech Republic up to 16% in Cyprus, averaging around the 11% mark.

3.4. State of the Union on the verge of crisis

As seen by the evidence above, the couple of years before the deep recession in 2009 were fruitful for countries in European Union. The unemployment was at all-time low, GDP grew at high speed, and at that time, almost nobody would imagine the coming fall. The misconception that Greek and German bonds had (almost) the same probability of repayment speaks volumes of how the perception of reality was flawed. Even after the fall of Lehman Brothers in United States, leading to

great instability on global financial markets, Europe was seen as a safe harbour against the uncertainty, not seriously affected by the American problems. In the middle of 2008, the EUR/USD exchange rate peaked at almost 1.6 US dollar per euro. While there were some issues tied with the American banking crisis, they were solved relatively easily (e.g. bank recapitalization in Germany), and the recession was meant to be countered by fiscal expansionary measures across the European countries, complemented by increased liquidity for financial sector provided by the ECB.

Under the strain of deep recession in early 2009, the real imbalances inside the union started to show. First to come was Greece, which as it turned out, was tampering with official debt statistics for quite some time. It was quickly apparent that the country would be unable to repay its standing debts, let alone continue to function with the skyrocketing debt. The first reaction of the EU, spearheaded by Germany, was strictly negative towards any motion of a bailout, and dismissing Greece to solve the problem by itself through austerity measures. It was even used in internal German politics in the time before elections, marking Greek citizens as irresponsible freeloaders. It took almost a year before Germany admitted that some kind of help was needed, and the country was promised help. In the meantime, the uncertainty spread to other peripheral countries.

For the core, or 'northern' members of the Union, before the crisis, there had been small amount of interesting investment options in the home region, and banks and other investors therefore searched for increased revenue. They found them, among other, in peripheral states like Ireland and Spain, which used the extra resources to increase their private spending and more importantly, investments. In the wake of the recession, the huge amount of newly constructed or even unfinished plants, offices and other buildings lost much of its overpriced value, and the developers went bankrupt. This caused the lenders, meaning home banking houses, to suffer most of the losses, and with the sheer number of these losses threatened to put them down too.

In Ireland, the government decided to issue guarantees to the banking sector in case of any losses tied with the bursting of the housing bubble, back in 2006. For several months, this seemed like a smart precautionary move, and Ireland was praised for that internationally. It seemed that the guarantees would be enough to stop the markets from disputing the soundness of its banks. Nevertheless, banks were forced to write off a large portion of their development portfolios and triggered the guarantees. The government debt jumped from stellar 40% at the time quickly over the 100% line, also thanks to costly recession, but mostly due to the bailouts. The uncertainty created by the Greek problem added more trouble for the country as the contagion spread, disallowing the government enough funding from the market at reasonable interest. It was next to be saved.

The situation in Spain was very similar: as well as Ireland it has been stellar in its pre-crisis situation, with government in surplus (as the only one in Eurozone before the crisis), strong GDP growth, and also with housing market bubble. Spain took a different course of action, forcing the smaller endangered *cajas* to merge into bigger banks, but the country take no measures to clean the balance sheets of these banks off the toxic assets. This move shut the housing market, as the banks were forced not to cut down the overpriced property, or face insolvency. It also halted financing to the companies and individuals, and thus completely stopped the economy. The fact is that Spain is a much bigger country than Ireland, and the sheer necessity of funding could possibly overwhelm the fragile markets. Nevertheless, this added even more to the uncertainty and panic. After some time of fighting the uphill battle with capital markets, Spain also took up the offer from European bailout mechanisms, but strictly for recapitalization of its strained banks.

A much discussed member of the south, who came under threat, was Italy. Viewed next to the rest of peripheral countries and deemed to follow their path, there were and still are some stark differences which are necessary to point out. On the surface, we can notice the high debt, exceeding 120%, rising unemployment (over 12%), poor economic growth. Going deeper, there are some strong differences between Italy and other PIGS countries. The financial sector is very modest compared to Spain and mainly Ireland. There was no investment bubble. Savings were higher compared to the rest of periphery. And Italy has been living with debt exceeding the 100% GDP line for the majority of the last one hundred years. It is indisputable, that Italian labour market needed strict reforms and major revision of government spending was due, but the position of being in one basket with the rest of the PIGS countries was rather the work of fear and uncertainty looming over whole Eurozone than because of broken economic fundamentals.

Several other countries were force to take aid from EU and IMF, including Eurozone's Portugal and lately Cyprus, or Hungary outside the Eurozone. The bailout mechanisms, the austerity measures tied with them and enforced on the countries in need of funding, and mainly the effectiveness of these in fighting the real cause of the crisis in Eurozone will be the main topic of the last chapter.

As the Lehman Brothers have shown, and of course later also this crisis, the worst enemy of financial markets, which are crucial for working economy of every country trough banks, as well as for the borrowing of the countries themselves, is simply uncertainty. It certainly is easier to say than to perform, but possibly, had the communication towards Greece and its sovereignty debt problem been better handled, the effects of the crisis in Europe could be much smaller.

4. Eurozone-wide Balance of Payments crisis

In previous chapters we examined various German policies throughout the past two decades and seen their impact on other European countries. In this chapter, we will discuss the real economic reason behind the post-crisis divergences and their impact on the functionality of Eurozone.

4.1. Nominal wage and productivity

So far, most of the indicators we have analyzed shown us that throughout the observed time, the countries usually converged or at least did not diverge significantly. There was no clear evidence that the nations now deemed as failures would go down the way they did. On the contrary, member states which shine nowadays reached subpar outcomes compared to the likes of Ireland or Spain. Why has Spain unemployment of more than 25%, when Germany has only slightly more than 5%? Let's take a look at productivity and unit labour costs in the differing countries.

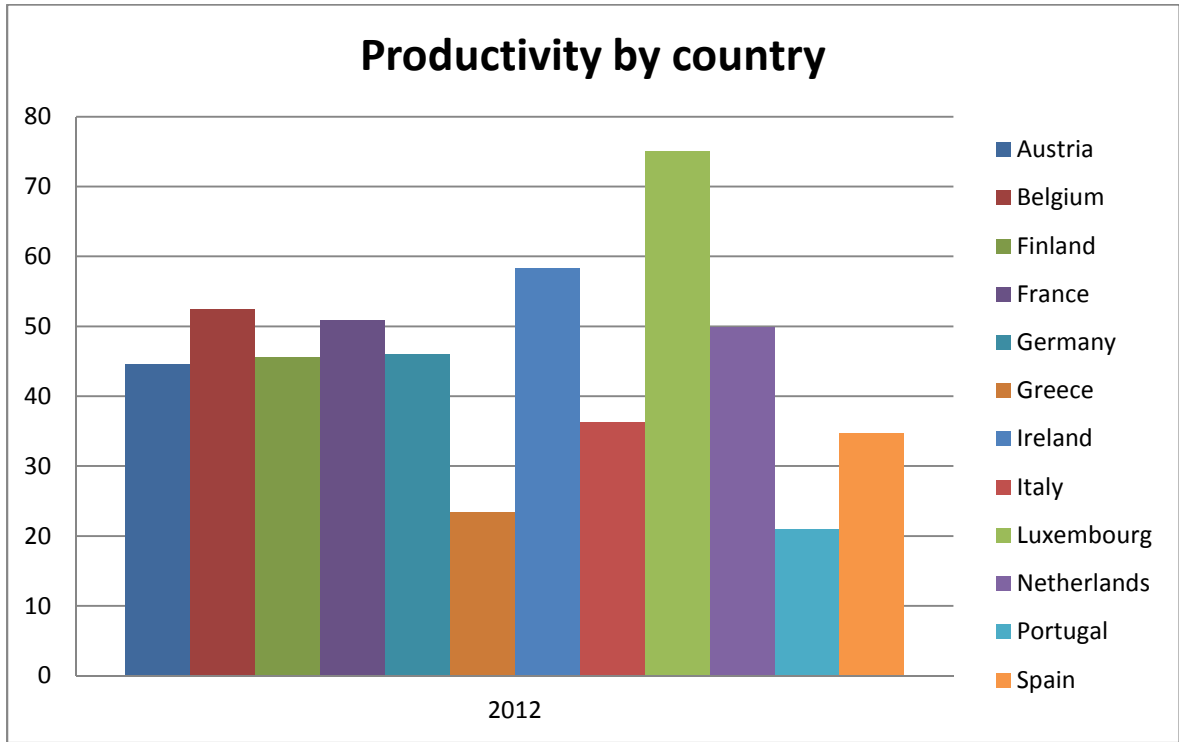


Figure 12: Productivity by country in euro per work hour, source: Eurostat

The productivity levels of old European countries does not differ all that much. Amount of money made by worker per hour in Germany is comparable to France, Finland, Belgium or others. Nevertheless, it is visible that the productivity of the peripheral states (not counting in Ireland) is lower than of the core countries.

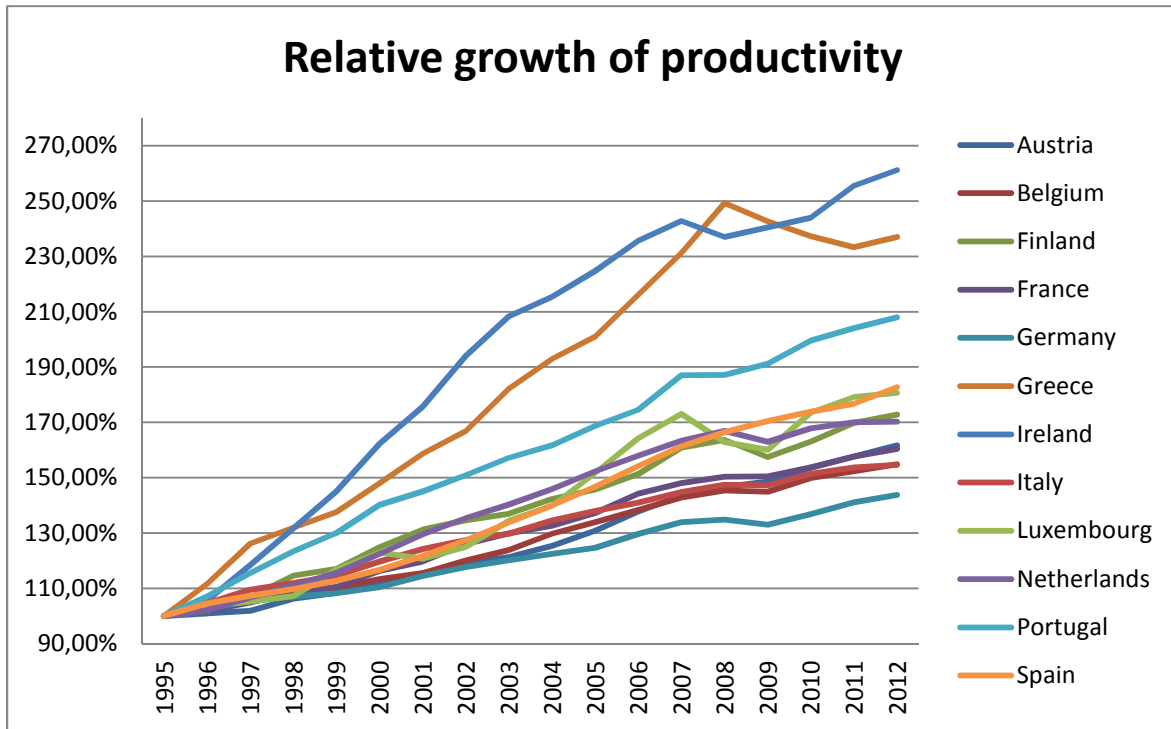


Figure 13: Relative growth of productivity, 1995 = 100%, source: Eurostat

If we take a look at the growth of productivity in the last two decades, it is interesting to note that the productivity increase in Germany was by far the smallest of all countries. On the contrary, the highest growth was reported in countries struck by the crisis, like Greece or Ireland. It is therefore inadequate to attribute the divergence in competitiveness to fundamental changes in productivity.

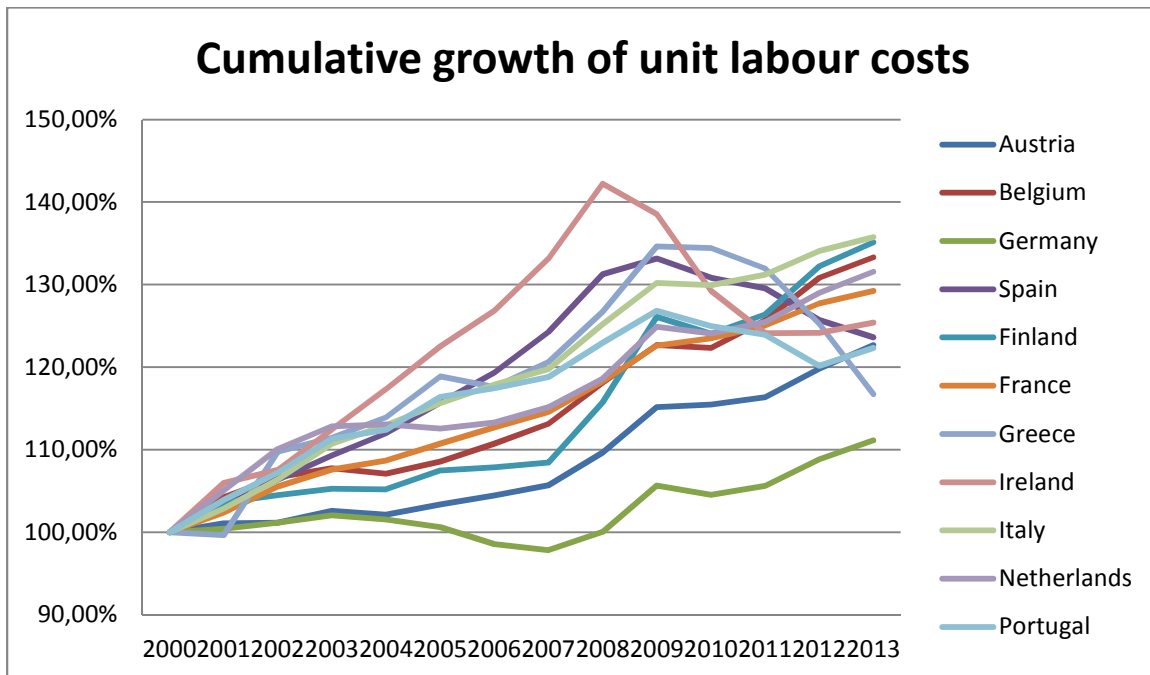


Figure 14: Cumulative growth of unit labour costs in selected countries, source: OECD

On the other hand, the cumulative growth of unit labour costs shows us some real differences. While in the ten years before the crisis there was a cumulative price deflation on labour market in Germany, the cumulative growth in countries like Ireland, Spain or Greece reached between 30-40%. Throughout the 15 years we observe, the increase in German unit labour costs increased only by 10%. This is not an accidental situation, albeit the effect of a very strict wage policy in Germany. We can plainly see the fact that after the start of the crisis, most of the vulnerable countries with overpriced labour markets attained steep deflationary policy, in order to restore their competitiveness against the rest of the Eurozone.

It is now obvious the source of competitive advantage of Germany over the peripheral countries is in its restrictive wage policy. The policy might look good in theory, but in reality, it is a conscious violation of the 2% overall inflation target set up and enforced by no other than Germany itself through Standard and Growth pact. Over the course of observed time, if 2% wage inflation was to be attained, the increase would amount to slightly under 130%. The country sticking to uphold this target the most is France, and Netherlands, Belgium or Finland are also closely around the mark. Of course, most of the peripheral economies went rampant with the seemingly unending supply of capital before 2008, and the wage increases ended up overshooting the 2% goal by a large margin.

Now we are at the heart of the crisis - this labour cost divergence is responsible for much of the real economic troubles in the Southern European countries. While in the first recession in 2009, as we have seen, the downturn did not hurt the countries very differently, in the following years, countries with higher competitiveness (either due to higher productivity, lower wages or a combination of both) shined in comparison to those with the lower one. This has been mostly received as a celebration of the soundness of the northern labour and productivity policies.

The fact that both the deflationary German policy and the unsound increase in the periphery is wrong needs to be stressed. As for the first, undercutting every other member of the currency area disables them any way to healthily respond to that very fact (short of undercutting even more), and is in reality the same as targeted depreciation of own currency for the sake of attaining higher competitiveness. Countering beggar-thy-neighbour policies was one of the key reasons of establishing the monetary union in the first place. There had been some improvement on the matter in Germany for the last few years, but the latest numbers indicate the fall back to labour cost deflation again. As for the second, it is obvious that the increase in wages was not in proportion to the increase in real competitiveness and the countries are paying a high price to return to the convergent path.

All this of course bears significant consequences, most of which we have witnessed in the previous chapter - unemployment, deindustrialisation (there has been a decrease in industry production in Spain of more than 25% since the start of the crisis), companies and banking houses under the pressure of bankruptcy, governments unable to effectively counter all these problems and running into debt trap. It has already been told before, but it makes sense to point out again the fact that before the recession, Spain or Ireland were among the most honoured countries in Europe for their economic outcomes, Spain even running government surpluses.

The realisation of this shows us that while committing ourselves into the monetary union, which is seemingly a one-way street, we simply did not establish appropriate measures that would control the inner economic balances. The only one policy included before the crisis was a budgetary one (Stability and Growth pact). As has been shown, in this scenario, it was completely ineffectual, because the only countries exceeding the criteria were Germany and France, whose stability was not seriously objected throughout the past few years. On the other hand, with the lack of brakes on labour or capital market, and with no ability to supervise and enforce European-wide policies to counter the accumulation of imbalances on real economic markets (especially in the situation with no exchange rate mechanism to clear these automatically, on the fly), the macroeconomic divergencies spread freely. It was a bit unnecessary, when looking back, because the lessons were here to be learned from the collapse of Bretton-Woods or the first EMS back in the nineties.

4.2. Balance of payments analysis

There exists a strong manifestation of the competitiveness problem, created by the divergence of labour costs, in form of the current account imbalances. Countries that export more goods and services than they import attain positive current account balance, and vice versa. While the European Union and also Eurozone as whole have their current account position towards the rest of the world very balanced in the long term, holding a slight surplus, when we break down the current account situation into participating members of the monetary union, the picture becomes vastly different.

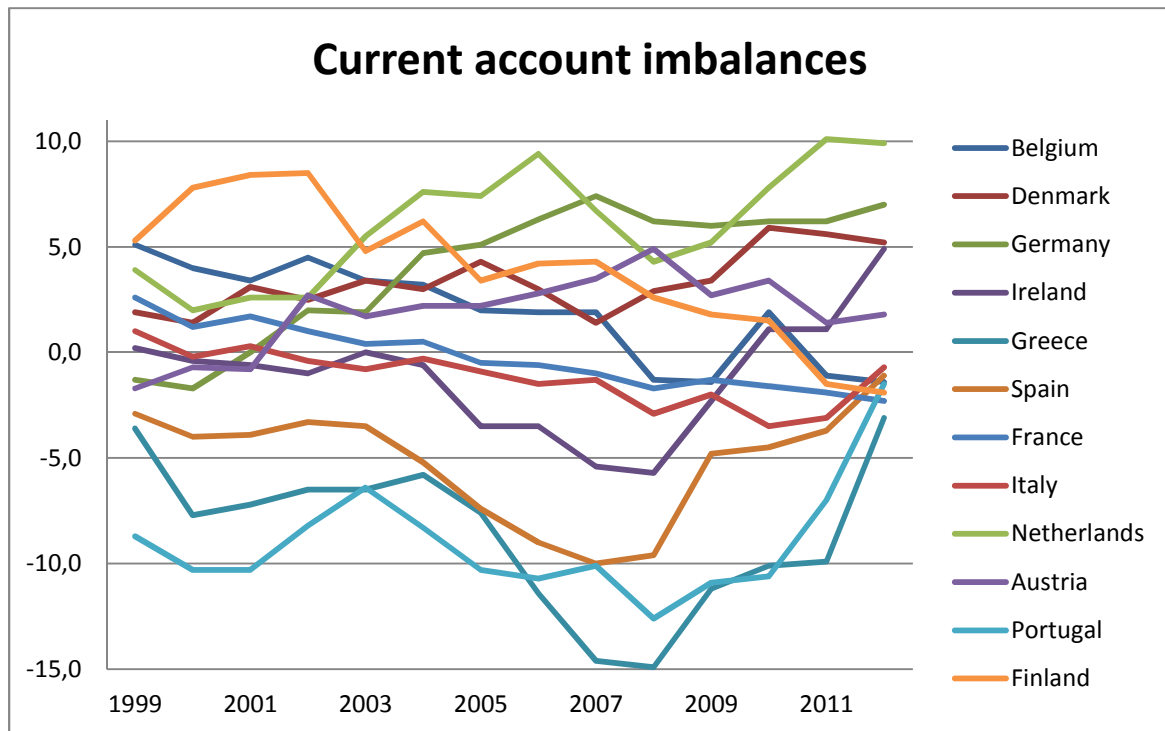


Figure 15: Current account imbalances for selected countries in % of their GDP, source: Eurostat

The core northern economies, such as Germany, Netherlands, or Denmark, belong to the group of countries with the positive current account balance. Opposing these are Greece, Portugal, Ireland (until 2010), Spain, and to some degree, also Italy. The distinction is by now easy to spot. While small differences, like in the case of France, Austria or Belgium, which fluctuate around the zero, are of no significance for the country and are almost unnoticeable. Long-term net Import of over 10% of GDP is, on the contrary, very dangerous for the economy, as the deficits need to be financed by the same amount of capital inflow. When accumulated, the country can quickly get under great financial strain if the capital markets decide not to roll-over their owned debt.

The countries running long-term exports have their own set of problems. For example, German finance system is famous for its low rate of return on equity, holding large chunks of liquidity with not enough investment opportunities. This led northern countries into investing significant amount of money into Spanish, Irish, Italian or Greek banks, and through them into housing or other markets. These lenders bear their own part of guilt for the overheating of peripheral economies.

The crisis in Eurozone, and by extension in European Union, is therefore mainly a crisis created by distortions in balances of payments of the participating members. These are caused by the divergence in competitiveness. With no exchange rate mechanism, there exists no automatic mechanism which would rebalance the current account deficits and surpluses, and after some accumulation, the problem becomes unsustainable. In section 4.3, we will explore how the

imbalances in current accounts manifested themselves in the TARGET 2 system and the balance sheets of banking houses in the periphery.

Nevertheless, it is important to comment on the development of several last months, where a visible trend of increasing the competitiveness hand in hand with rebalancing the current account in debtor states is happening. This is a very positive sign of resolving of the immediate balance of payments divergences between the member countries of Eurozone and thus stabilizing the situation. However, even if successful in the end, measures applied are only countering the existing problem and are not systematically disallowing the creation of new ones.

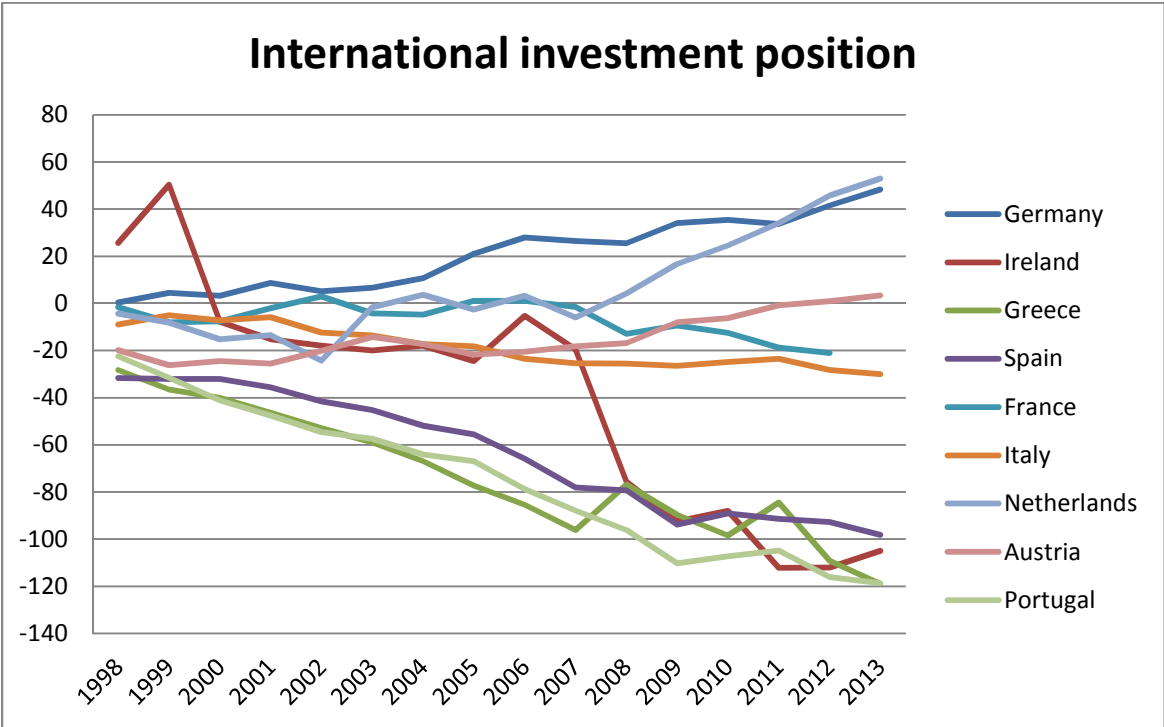


Figure 16: International investment position of selected countries as a percentage of their GDP, source: Eurostat

The international investment position of European countries complements what has been discussed above. Countries running positive current account serve as lenders to the countries running long-term deficits, and to no surprise these are mainly Germany, Netherlands, Austria or Luxemburg. The figure points out deep deficit exceeding 100% GDP in the debtor countries, which will be hard to resolve and will take significant amount of time to bring down. While we see 'only' 50% GDP position for Germany and lately also the Netherlands, nominally they together almost perfectly cover the opposite position of the debtors.

4.3. TARGET 2

TARGET 2 is a real-time gross settlement system operated by the Eurosystem (ECB and the national central banks of the participating countries, which is obligatory for Eurozone and voluntary for other EU members). It processes cross-border transaction on a real-time basis and the net of the system is always zero. The transaction goes from buyer's own bank as a debit to its local central bank, which then issues credit to the opposing central bank of the seller. Seller's bank then receives credit at its central bank in the amount transitioned. Thanks to this system, ECB is able to create an environment of stability by minimizing the risk on the payment market, as well as simplify the flow inside the monetary union.

In other words, countries who have current account deficits towards the members of the eurosystem, and these are not covered by capital inflows done by the members (thus decreasing the difference in cross-border transactions to zero), borrow the missing funds from TARGET system, and this imbalance is offset by another member of the system, who has a surplus of his current account over his capital outflow. Normally, and from the figure below it is easily visible right until 2007, the current account deficit and capital inflows (or vice versa) negate themselves, creating only short-term fluctuations in the TARGET 2 balances.

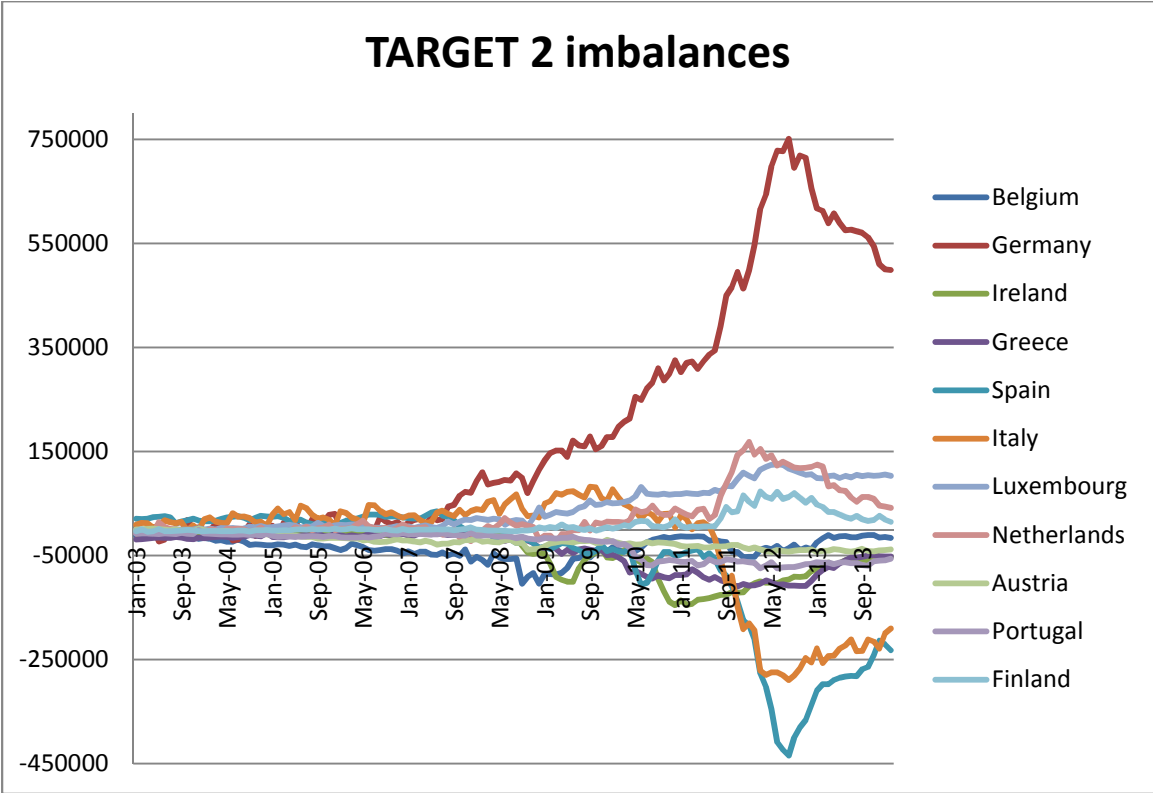


Figure 17: TARGET 2 imbalances in billions of Euro, source: eurocrisismonitor.com

After the recession broke out, as we can see, the countries' position in TARGET 2 system started to vary. Greece or Portugal were forced to cover their current account deficits (as seen in previous subchapter) by TARGET 2 lending almost immediately, while Spain or Italy were, for some time, able to offset these by capital inflows and did not create significant positions in the system. However, as the uncertainty of the Greece situation prolonged, with other countries also being aided by the funding, fear and contagion on the capital markets spread over these countries, too. We can see a sharp rise in the TARGET 2 funding in Spain and Italy, projecting the capital flight that has taken place in these countries. At present time, the system's deficit for these countries is higher than the cumulative balance of payments deficit since the start of the crisis.

The timing of the increase in financing of current account deficits in both countries coincides with the long-term operations (LTRO) which ECB provided for banks across Eurozone due to the liquidity drain on interbank markets. The former funding of peripheral banks had been replaced by cheaper and more stable one by the ECB facilities, and thus after fulfilment of the former loans, these were not re-rolled and returned back to the core countries (mostly German and Dutch banks, as is apparent from their TARGET 2 claims increase parallel to the increase in the Italian/Spanish debt towards the system).

The cumulated deficit positions in the system are in translation a borrowing facility provided by the countries in surplus, at the moment mainly by Germany. This funding is bearing interest, and has a real value as emitted central bank money in the system. It complements the central bank money created by the home residents, companies and government by their economic activity. This extra lending facility is helping the debtor countries sustain the crisis of confidence in their ability to repay their debts and also in their own banking sectors. The decline in the TARGET 2 imbalances is closely tied to both structural reforms diminishing and countering the real market differences between the regions of Eurozone as well as the monetary policy conducted by the central bank.

4.4. Imbalance channels inside monetary union

Outside a working monetary union, arising imbalances such as those we described in the last few sections would be naturally offset by an exchange rate movement. Less effective production of goods and services, higher nominal costs of work, or significant increase in capital flow which could trigger investment bubbles all 'automatically' change the exchange rate without anybody's conscious decision (in an environment of pure floating exchange rate, of course). For example, country with a long-term balance of payments deficit would depreciate its rate and thus allow for higher exports and lower imports of goods and services, closing back the hole. This effectively devaluates the assets belonging to the citizens of the country by increasing the costs of foreign goods, meaning their

income is losing value, and is therefore called external devaluation. Nevertheless, this being no man's decision, it is taken if not lightly, then at least not with sharp discontent by the population. Conversely, this can be applied to countries with balance of payments surplus with the opposite effect.

For countries in a zone of fixed exchange rate, this mechanism is not inherently present. The imbalances in real economy, if not checked for and corrected in time, tend to cumulate and burst. This has been the issue in both Bretton-Woods system as well as in the first EMS. However, there are still options for solutions through the external devaluation channel - the exchange rate can be moved in a decision made by central bank, facilitating and containing the divergent tendencies, or the country can leave the zone of fixed regime and let the rate float back to equilibrium.

Inside a full monetary union, though, the option of leaving the currency and recreating the national one is severely restricted, if not impossible (this option will be explored in section 5.4.), leaving us with the last option - internal devaluation. This is a process where all prices of inputs (and through that, also of the outputs) decrease and thus reinstate competitiveness of the economy. However, this is a long and painful process, with the added fact that it has to be done by a political decision. Stickiness of prices mainly in labour markets, but also in other input areas are also a well known issue present. Applying strict austerity measures by policymakers is very often an act of political suicide, as can be seen in Spain, Italy, Greece or Portugal in last few years, where disgruntled population forced prime ministers and whole governments into resigning and led the countries into early elections. While if done correctly, the outcomes of external and internal devaluations should not differ, there is a significant reluctance in applying the latter.

Interesting take on a variation of internal devaluation has been made by Ruud de Mooij, Michael Keen (2012), who debated the effect of decreasing the direct taxes, while simultaneously increasing the indirect taxes (specifically value added tax). The effect of this 'realignment' in tax policy would be neutral for government budget in sum, but the change would lower price of output created in the country and simultaneously increase the price of all export. This competitive tax devaluation would in fact have an outcome similar to the internal or external devaluation described above. However, this method has never been tried and is not really applicable for European context (where taxes are harmonized to a significant degree).

There is, of course, a counter- method to internal devaluation in monetary union, and that is one of inflation. Decreasing the competitiveness in the opposing part of the union would in theory lead to the benefit of the borrowers and to the detriment of lenders. Outside of the theoretical framework,

this is hardly applicable - the successful country would see this as a punishment for being 'too good' - in our case, the thought of this in Germany is the scariest of all outcomes.

However, the realignment of exchange rate present in free floating mode or in devaluation of otherwise fixed rate is normally hurting both partner sides by the same amount. Country getting comparably more competitive and poorer on one hand is balanced by the other getting richer (by the imports getting cheaper in home currency), but less competitive by the exchange rate appreciating. In case of austerity measures applied for internal devaluation only on the debtor side, with no reaction to the issue by the lender country, could be seen as undiplomatic, not politically wise and last but not least, not the best economic solution available being used. Therefore, application of balanced policies should be searched for in order to satisfy both sides similarly.

4.5. Banking crisis

Even though a complex analysis of European banking crisis following recession of 2009 is beyond the scope of this work, the key problems bear implications on the policies undertaken in the fight against the crisis. Special subject of importance in this regard for the thesis is of course the connection between national and banking sector debts, where the downgrade of one leads to deterioration of the other, and that spirals forward.

The countries most stricken by the crisis through their banking sector were in no doubt Ireland and Spain. The genesis of their trouble was described in section 3.4., pointing the cornerstone of the problems at housing market bubbles, leaving the lender banks with balance sheets full of toxic overpriced assets. While Ireland was quick in resolving of this costly problem (and paid the price of forced EFSF participation), Spanish banks, to the present day, have some portion of these assets in their balance sheets.

In 2011, uncertainty across capital markets, including the interbank market, spiked. Liquidity quickly evaporated as banks from the 'core' countries cut the financing lines towards their peripheral counterparts in fear of catching the contagion. Eurozone crisis was at its peak, division of the monetary union into smaller parts or departure of problematic members were openly debated. ECB stepped up, and with its program of long-term refinancing operations (LTRO, 3 years maturity) poured huge chunks of liquidity into interbank market in late 2011 and again in early 2012 against collateral. The rules for the needed collateral were severely loosened, and as it was shown, most of the liquidity was picked up by Spanish and Italian banks. This in turn gave the commercial banks some space to write off the most pressing assets and stabilized their liquidity. This huge liquidity was then used to buy sovereign debt issued again by Spain and Italy, and thus stabilized the bond market,

too, and allowed the affected countries to decrease their cost of debt financing, which was already balancing on the verge of collapse (both nations' interest rates held over 5% for several months, before declining). ECB, even without clear mandate to be the lender of the last resort, declared its readiness to hold Eurozone and the currency at all cost.

This unprecedented move had severe implications on the face of the crisis. First, it disallowed the spread of uncertainty and slowly degraded it. Second, the affected countries and the whole Eurozone were bought time for implementing stronger reforms. Third, the measures to save the banking system helped to further grow the TARGET 2 imbalances, as described in section 4.3. Despite the dangers of the third effect, it is not hard to advocate the change in policy as the best of the bad options under existential threat. Important question is whether peripheral banks and countries will be able to regain the original interbank funding. This is clearly depends on application of structural reforms that will fight the further growth of the divergences, and on the future soundness of the banking sector depending on these.

A topic closely connected to this is one of banking regulation. It is evident that in case of peripheral banks (especially Ireland and Spain), the accumulation of such exposition towards sole industry was not in any way responsible. Furthermore, the crisis showed that some banks are indeed European in size, and countries are in trouble if left to save them alone. Both these are strong reasons for increasing the quality of regulation on a single bank basis (better regulation of quality of financing, stricter rules for liquidity and its management, higher capital buffers, better control over diversification of assets) and also on the multi-national level (single regulator of systematically important financial institutions and crucially, common fund for insurance of bank deposits).

These changes are already being created in the third version of Basel standards. The multinational regulator under ECB jurisdiction is also underway. It can be said that thanks to higher Basel standards, coupled with recent changes to banking supervision and regulation in form of Single Supervisory Mechanism and Single Resolution Mechanism, the Eurozone is on the right track to learn its lesson in regard to the banking crisis.

5. Applied and potential Balance of Payments policy measures

Since the outbreak of the crisis in 2009, several European countries were hit hard by economic downturn. Outside the Euro area, these were Baltic countries (Lithuania, Latvia), Cyprus or Hungary, and inside the Eurozone nations mostly from the southern part of the Union - Greece, Portugal, Ireland, Italy and Spain. Most of them had to apply significant measures in order to contain the crisis.

We will explore the undertaken reforms, the mind and motion behind them, and evaluate the level of their success in decreasing the imbalances presented in previous chapters. Following that, we will try to evaluate a range of applicable alternative mid- to long-term solutions for the still present Balance of Payments crisis.

5.1. Bailout mechanism and loan conditions

Before the collapse of Greek ability to finance their steeply climbing debt, there was no need in Europe for a mechanism that would bail-out members in trouble. The inability to compete and vast inefficiency of government on every level in Greece became apparent shortly after the recession broke out. Germany spearheaded the thought that government spending cuts will be enough to reclaim the trust of the financial markets, and avoided any suggestion of international help. There are two plain reasons for that: first, any bail-out of one country by others is forbidden by the text of the Maastricht Treaty, and second, the 'lazy Greeks' argument was wildly used in domestic politics not only in Germany.

However, significant spending cuts met strong opposition in Greece, and situation steadily deteriorated to a point where the nation's default was imminent. After realizing the fact and the consequences which it would bear on French and German banking systems - the major Greek debt holders - frenetic effort was made to stop the bankruptcy from realizing. In May 2010, first set of loans valued at €110 billion were promised in exchange for austerity measures (a combination of spending cuts, tax increases and privatization). By that time, Greek primary government deficit was exceeding a staggering 10% GDP. Through the applied measures, even in the environment of severe recession, primary surplus has been reached in 2013, though it necessitated a second loan (€130 billion).

In spite of the late saving effort, the damage was already done. Until 2009, Europe was seen as relatively safe harbor against the crisis, but the rising uncertainty in solving the Greece case, complemented by politicians across Europe ducking the responsibility and avoiding commitment to any kind of solution, brought the fear to financial markets on this side of Atlantic Ocean, too. While Greece is economically an outlier in Eurozone, whose share amounts to no more than 3% of total

GDP in the whole monetary union, repercussions of the inaction soon surfaced. Ireland, troubled by its overgrown and toxic banking system, or economically weak Portugal, soon needed help by the international community too. Ad hoc lending solutions on bilateral basis were no longer a viable option.

As an answer, a temporary special purpose vehicle was created called European Financial Stability Facility (EFSF), which was authorized to borrow up to 440 billion euro from the financial markets, guaranteed unanimously by the Eurozone member countries (proportionally to their share of equity in ECB). A similar, but much smaller vehicle EFSM was also created and guaranteed by European Commission in maximum amount of 60 billion euro. These funds committed to lend Ireland and Portugal 85 and 78 billion euro, respectively, in less than a year after being established in May 2010. Both of these loans had strict conditions for the receiving countries to fulfil. Similar to Greece, the countries are under review of the European Commission in three distinctive sections: government spending cuts and restoration of fiscal sustainability; deleveraging and overhaul of excessive banking sector; and growth-enhancing reforms, targeting the labour market.

It soon became clear that the fear is spreading further, that it was possible for other Eurozone countries to come under similar duress from financial markets, and that Greece needed further help. EFSF, which was viewed by the EU as 'unlimited' in its enormous capacity, and thus disallowing any doubt of the union's ability to save itself, quickly became insufficient, and so its capacity was increased up to 780 billion euro in July 2011. EFSF was tapped once again in February 2012, when the second Greek bailout was agreed in amount of 130 billion euro. The deal requested further austerity measures, privatisation, and highly controversial 50% cut on outstanding debt towards private investors. Along with the new liquidity, the EC, ECB and IMF agreed to decrease the interest on all loans, new and old, to 3.5%.

In the meantime, a push for a stable and permanent mechanism to resolve debt issues came into fruit in form of European Stability Mechanism. The ESM's capacity is capped at 500bn euro, which can be used in several support programmes - sovereign bailout loan; bank recapitalisation loan; precautionary financial assistance; primary and secondary market support facility. The range of programmes aims to help countries under strain, and also aims to prevent the need for a significant bailout by early intervention both directly and indirectly.

First use of ESM came on the peak of Eurozone crisis, when the contagion spread to Spain and Italy. Both countries had been battling the financial markets for some time at that point, applying austerity measures in order to prove their solvency; they were successful to a degree. Nevertheless, in Spain, the added trouble of toxic banking sector, similar to Ireland, was too much to handle by the country

alone, and so a line of credit was provided to recapitalize the banking system in October 2012. 41,3 out of 100 billion euro was used to this purpose. Lately, 9bn euro was also lent to Cyprus to help recapitalize its ailing banking system.

Countries of Eurozone were not the only ones to be under duress from financial markets. Baltic countries, especially, had an experience very similar to the one of Ireland or Spain. Before 2008, Latvia and Lithuania were considered as a great example of stable and growing economy. However, in reality, they suffered from steep current account deficit and there was a significant housing bubble present before 2008. Exchange rate, a key tool in balance-of-payments crisis, was absolutely pegged to euro in Lithuania since 2002, and fixed with a minimal deviation in Latvia since 2005, thus creating conditions comparable to the conditions of countries in a monetary union.

The economic fall following the burst of housing market bubble amounted to the loss of almost 20% GDP in both countries in 2009, unemployment spiked and government debt soared. Latvia had to accept a 7,5 billion euro loan from EU and IMF and to recapitalize one of its banks. Nevertheless, the countries applied willingly the strict austerity measures on themselves, reducing public wages and decreasing overall government expenditures. In fact, compared to Eurozone countries which had to undertake the same treatment, it was applied much quicker and harder, and quite amazingly, with a relative consensus of the population. The positive trend of all economic indicators showed relatively soon - in no more than two years, which can hardly be compared to the data presented for Eurozone countries. Very interesting is the fact that neither Latvia nor Lithuania decided to take the 'easier' way of external devaluation or outright leaving the fixed regime, but went for the 'harder' or more painful choice of internal devaluation.

5.2. Effects of austerity measures on restoring competitiveness

In the previous chapters, we have established that the significant reason for the creation and strength of the crisis is the real economy divergence between the countries, manifested in cumulative unit labour cost divergence and translated into current account imbalances inside the Euro area, along with the reasons for these phenomena. Since the outbreak of the crisis, there has been a degree of restoration of balance in unit labour cost divergences between the countries and as of late, in the current account situation as well.

According to the previous subchapter, a way of resolving the crisis has been found, basing on austerity measures coupled with labour market reforms and recapitalization of the banking system where necessary. This solution has been spearheaded by Germany, arguing that the life on debt and over-spending in countries needs to be reversed so that the governments remain solvent and able to

borrow funds from financial markets. This was, in reality, an attempt to solve the consequence, not the cause, as all the affected countries were above average in terms of government financing throughout Europe before the crisis. In this section, we will test the following hypothesis:

Government austerity measures negatively affect unit labour costs.

As we want to examine the performance of austerity measures over time, we need to use panel data. The data used contains time series for countries Greece, Ireland, Spain, Latvia, Lithuania and Portugal between years 2007-2012. All data are downloaded from Eurostat and OECD. The model used will be fixed effects model, as we are interested in the impact of variables over time. The correct formula is:

$$y_{it} = \alpha_i + \beta_i X_{it} + \epsilon_{it}, \quad \epsilon_{it} \sim iid(0, \sigma^2) \quad i = 1, \dots, n \quad t = 1, \dots, T$$

where α_i is the intercept; β_i is the coefficient for independent variable; y_{it} is the dependent variable; X_{it} represents one independent variable; i represents entity and t represents time.

The independent variable, *unit.labour.costs*, is expressed as a yearly percentage change in the unit labour cost with respect to the previous year. In this state, we can compare countries on value levels otherwise different. We also search for an explanation of the change in unit labour costs, which suits our needs perfectly.

Dependent variables have been chosen on the basis of economic theory. *Relative.GDP* represents yearly percentage change in GDP in the respective country. It is the same format as the independent variable, and for similar reasons. Expected sign for this variable is +, as the negative change in GDP should have a diminishing effect on *unit.labour.costs*.

Inflation is represented by Harmonised Indices Consumer Prices. *Unemployment* is also expressed as a yearly percentage change of unemployment. Sign for both variables is also expected to be positive, and the reasoning follows the reasoning for GDP.

Finally, *C.CF* represents change in government expenditures, specifically in overall government consumption and capital formation. During crisis, with the economy otherwise in turmoil, several sections of general government budget have contradictory effects - some policies like automatic stabilizers increase the expenditures even without any vote by the government, while some policies are under direct control of the government and can be changed accordingly. Such are the two picked sections of total expenditures - overall government consumption and capital formation. The variable *C.CF* is the sum of these two expenditure types. The data used is for general government. The

expected sign is +, because we expect that the decrease in *C.CF* will have a decreasing effect on *unit.labour.costs*.

After running the model, variable *Unemployment* is insignificant and thus after iteration, it is omitted from the model. Final output of the model regressed in R can be found in Appendix of this thesis. All variables are significant, *Inflation* on a 95% level of confidence, the other two variables on higher levels. Overall R^2 is relatively high. The signs on the dependent variables' coefficients, as well as their size, are all according to the economic theory. **Key for our study is the significance of *C.CF*, which proves that the undertaken austerity measures by the debtor countries help reduce the unit labour costs.** A 1% decrease in *C.CF* means a 0,3% change in *unit.labour.costs*.

Testing the model and parameters shows us that we cannot reject homoskedasticity (bptest), which is positive. Our data have both cross-sectional dependence (Breusch-Pagan LM test) and autocorrelation (Breusch-Godfrey/Wooldridge test), but in short panels like ours, these two are not that much of a problem. There are also several other problems with the data, mainly quantitative. The number of countries with similar economic conditions is very limited, as is the time parameter of the panel data. Furthermore, the austerity measures do have a non-negligible lag in their application. Repeated test with more data in the future can be useful to confirm the findings of this model.

5.3. Analysis of the results

There are some extremely important implications of the results obtained. The significance of our variable proves that the austerity measures do have an effect on the unit labour costs in the economy. This means that the government expenditure cuts, and the German way of solving the crisis in Eurozone, is effective in fighting the real causes, and helped preserve the Eurozone and European Union. This is a historical feat. However, there are several distinctive acknowledgements which need to be mentioned along the positive results.

Firstly, we need to understand the absolute meaning of the result. Even if the austerity measures do decrease the divergence which has accumulated since the creation of the Eurozone, they only solve the present problem. There were no further measures implemented which would actively counter the creation of macroeconomic imbalances. This is a fundamental flaw of the overall applied policy, and can be at least partially credited to the misunderstanding of the causes of the crisis.

The most important policy change during the crisis - Six pack - contains four changes in Stability and Growth pact, aiming mainly at better enforcement of the rules. The other two changes included in Six pack monitor for macroeconomic divergences between the countries' indicators such as current account balance, net international investment position, change in unit labour cost, housing market

price change, or others. While this is a step in good direction and shows that the policymakers are now aware of the possible dangers, it is odd that the indicative thresholds are skewed in favour of surplus countries (e.g. current account surplus +6% indicative threshold; deficit only -4%). Furthermore, there has been no serious push for a stable working solution which would be robust enough to automatically avert a growth of imbalances such as these we experienced. In the last section, we will take a look on a range of possible alternatives for long-term solution to the balance-of-payments problem.

Secondly, there is a question of efficiency. This thesis proved that the applied policies helped to diminish the imbalances caused by unit labour cost divergence inside the monetary union, but for now, unfortunately, there is no way of testing whether it is the most effective policy to achieve the goal. The situation is unique, and there are no historical data with different policy applications that could be used to compare their efficiency. There is only a handful of examples of a fixed exchange rate zones - Bretton-Woods, the first EMS, or Southeast Asia before 1997 crisis - and these all, under pressure from the divergences comparable to the ones affecting the Eurozone throughout the crisis, decided that the best solution to the problem is to dissolve the regime. Even though monetary union is a much complex entity than a currency zone, they are of similar nature (especially in the current account balance problem), and analysis of long-term effectiveness of these different approaches could bear fruit in the future.

This efficiency can manifest itself on different levels. Even though the situation is progressively stabilising in Eurozone according to the key economic indicators, the crisis-stricken countries are left with extremely high unemployment, with a part of the population displeased or outright rebelling against the austerity measures, leading to political instabilities. The situation in these countries also directly affects the view of the whole European Union by its citizens. In the presence of the sluggish growth and high government debt, with the emphasis on deleveraging and decreasing the overall debt level, there is a justified fear of 'Japanese lost decade' scenario unveiling in the European periphery. Would other policy options bear these same consequences?

5.4. Euro area exit

One of the hotly-debated options to solve the Eurozone crisis (and a permanent resolution of the problem no less) was for one of the sides to leave the monetary union. This would allow for external devaluation through the effects of exchange rate mechanism once again. There were two options discussed - departure of a debtor country (namely Grexit), or creation of separate 'southern' and 'northern' euro, and thus separating the bulk of the debtors from.

While a good plan on the paper, there are several hurdles when creating a new currency even in times of confidence and peace on the financial markets. Setting the exchange rate of a currency, and price levels accordingly, is an uncertain task at best. The exchange rate, in fact, is a relative number, with no fundamental basis to be calculated from precisely, and it is, in most cases, up to the financial markets to decide whether the rate is 'fair'. In the situation of uncertainty, we have witnessed a tendency of markets to overshoot both optimistic and negative expectations.

In case of the Greek exit from Eurozone, the consequences are not hard to predict. As most of the debt was denominated in euro currency, leaving for drachma and external devaluation would only make the financing, and, more importantly, repayment problem even harder to solve. A government bankruptcy would be inevitable, followed by a quick collapse of the banking system and a loss of most national savings.

Depending on the time of the event, that would bear consequences also on the rest of the Eurozone. Would the Grexit happen in 2009, the repercussions of bankruptcy on banking systems of other nations (namely France) could prove fatal for European finance markets. On the other hand, at the peak of the crisis in mid 2012, when most of the Greek debt had been transformed to the hands of European governments, the event would increase their indebtedness by a range of 10-20%, and the strain on Spain, Italy or the created lending mechanisms would increase.

Further implications on the Greek society and politics are grim: a risk of a revolution, civil war or at least prolonged political instability would not be negligible. These non-economical factors are hard to measure in raw numbers, but the potential for such situation would surely destroy any ethos left in the European Union, the union of nations created to attain peace, friendship and prosperity between the nations of Europe.

On the other hand, according to the economic theory, the much greater economic downturn created by the wild bankruptcy would allow the country to attain competitiveness much quicker than in the case of presently applied policies. At the moment, Greece is choked with bloated government debt, extremely high unemployment and most importantly, no bright vision of change in this regard in the near future.

A sole departure of Germany has, at the first glance, much less controversial consequences. The country is acclaimed by the financial markets and its reputation would not suffer by the tiniest bit. However, the implications would be much more subtle. The new Deutsche Mark would appreciate against the currencies of the third countries; the euro would depreciate against these currencies to offset the change. It can be expected that the appreciation (and the respective depreciation, too)

would be at least in the range of 10%, as since the start of the crisis, the Euro depreciated against other global currencies roughly by 10%. Germany is economically the strongest country of the union, and so this estimate is conservative.

German economy, with its growth depending on its strong export, would not be unharmed by this. Decrease in production and employment, increase in government expenditures, and other factors could be expected. The yearly value of global German export amounts to more than 1 trillion euro, and the immediate effect on GDP can be roughly valued to a loss of 100-150 billion euro, or an equivalent of 3-5% GDP (with further repercussions of employment loss, government revenue-expenditure gap increase, potential recapitalisation of domestic banking system, and others). It is important to bear in mind that the exchange rate against euro would appreciate even more than against currencies of the third countries, and the countries of the Eurozone are a destination of about 33% of all German worldwide export.

As for the euro without Germany, the depreciation of the exchange rates would bring vital increase in competitiveness. This seems as a winning scenario for the troubled economies, as well as the rest of the monetary union, however, there would be no member country as strong as Germany to hold the guarantees over the viability of the currency. The risk of slow collapse of the monetary union by the invisible hand of the financial market would not be negligible.

The dissolution of Eurozone into 'southern' and 'northern' euro would bring forth similar issues. The 'northern' part, including creditor economies like Netherlands, Austria, Finland and also the second biggest economy of EU France, would face smaller adjustment in the exchange rate than in the case of the sole exit of Germany. On the other hand, there would be a natural risk present in form of a new division of creditor and debtor economies inside the new 'northern' euro; France would be the expected candidate for a debtor country inside the new monetary union. The 'southern' euro would suffer the fear and uncertainty of financial markets on its own. With no clear, strong guarantor of the currency's survival, its fate would very likely end in dissolution.

In any case, several implications are clear from this analysis. Germany benefits from the unified currency, and its relatively depreciated value compared to Deutsche Mark, if it was in existence. The price paid by the country is the position of guarantor and lender of last resort. As long as the single currency project exists, and economic strength and philosophy of Germany remains unchanged, the country has every reason to fight for the survival of the union. Outside of the economic view of the dissolution issue, it is highly questionable how the whole European Union, on the political and sociological level, could continue to work together after a partial or complete dissolution of the currency.

5.5. Creditor side measures

The brunt of the balancing effort has so far been borne by the debtor countries. These countries undertook unprecedented measures to decrease their economical imbalances and at high cost, both economic and political. However, as has been shown by this thesis, the share of the blame for the creation of the crisis is the same for debtor as well as creditor economies, for one cannot exist without the other. Nevertheless, up till now, the debtors are seen in a diametrically different light than the creditors not only in media or politics, but also by the adopted policies (see Six pack in section 5.3.). If the exchange rate existed between economies and an adjustment was needed, the change in the rate would benefit and hurt both countries at the same. This has not been the case during the still ongoing balancing process in Eurozone, and the outcome is that the adjustment carried out by the debtor countries is excessive to what would be needed if the effort was balanced.

There is, in fact, still a lot of room to proceed with policies that can help restore the balance in the field of unit labour costs in Eurozone. Especially Germany, as was shown in section 4.1., needs to reiterate on its wage and consumption policies. There is, of course, a strong political push against any inflationary policy in Germany, even a moderate one. Nevertheless, several options are available and should be considered in order to partake on resolving of the problem. Consumption, a long-term weak point of German economy, can be supported by increased government expenditures or, for example, by cancelling of the Sunday work prohibition (that could have positive effects on unit labour costs, too). Crucial is the restoration of sustainable growth path for unit labour costs.

Monetary policy can be very well used in this regard as an area-of-effect tool. If the inflationary goal was set up (and more importantly, respected and held) in the 2-3% range for the whole Eurozone, the lower inflation in debtor countries undergoing austerity measures (e.g. 0-1%) would be offset by higher inflation in the creditor countries. This would naturally help decrease the imbalances, as it automatically increases all prices in creditor economies relative to the prices in debtor economies. While it can hardly be applied alone to counter the imbalances, it is more than suitable to complement the austerity measures.

Unfortunately, this is a policy politically unreachable in the current Germany. In the last three years, two German members of the ECB board resigned over the fear of inflation due to the monetary measures undertaken. In reality, Eurozone-wide inflation is well below its 2% target and is on the verge of deflation in the debtor economies, which can, if not corrected, create a separate problem of its own. An inflation of 4-5% would cause havoc in the strongest European economy.

5.6. Fiscal transfers

Any unified economic environment working successfully is subject to fiscal transfers. Between richer and poorer parts of one city, between cities and villages, or through the national budget, on all levels of any monetary union there are different regions. Fiscal transfers are the ones linking these regions permanently together to a compact functional entity.

European Union, and more importantly Eurozone, does not have such functioning transfers. This is a major flaw in the concept of the monetary union. There is no policy tool fully capable of replacing these transfers in their role. Depending on the type of implemented transfer, these can fulfil various roles. These transfers should:

- positively incite and reward actions (i.e. undertaking of a reform)
- decrease the difference between macroeconomic indicators, especially price levels on all markets
- be light and only in minimal extent necessary to achieve the specific target
- act as automatic stabilizers - no lengthy decision-making process involved

Following these criteria, Eurozone does not require an enormous budget to operate. The bulk of the stabilization process can be still retained to the national government, with only a small, targeted set of transfers applied centrally to hold the monetary union in balance.

Once again, this motion is strongly against the will of German voter and policymaker. The country promotes the vision of each nation responsible for its own fate and decisions and sees no point in paying the debts they did not help create. As has been shown in section 5.5., Germany actually benefits substantially from the Euro project participation, and there might be a window of opportunity to give back, if the option is selected carefully.

6. Conclusion

This thesis analysed the recent crisis in Eurozone and the role Germany played in its creation and resolution. It shows that the key factor for the outbreak of the European crisis was the long-term real economic imbalance caused by divergent unit labour costs of member states, complemented by a crisis of national banking systems. Accumulation of these divergences created a state where some countries became relatively uncompetitive while other conversely relatively too competitive. While the one-way flow of goods and services between the member states had been, for some time, covered by a current account deficit and surplus for the debtor and creditor countries respectively, after 2009, the uncompetitive economies became unable to finance this deficit by capital inflow as the financial markets refused to lend them necessary liquidity.

The policy chosen to counter the crisis was restrictive - debtor countries willingly or under pressure imposed unprecedented austerity measures upon themselves. The main goal of this thesis was to quantify if the chosen policy was effective in countering the real causes of the crisis, as has been stated above. This was conducted through econometric regression. The outcome is positive and significant - the austerity measures indeed help in diminishing the imbalances present in the monetary union. This is an extremely important finding for present and future evaluation of the crisis and also for the stability of the Eurozone. Nevertheless, it could be more effective if complemented by further fiscal or monetary policies as is analysed throughout the fifth chapter.

Germany played a pivotal role in the shaping and decision-making of the monetary union both before and through the crisis. As has this thesis shown, internal, as well as external economic policies adopted by Germany throughout the last two decades had significant impact on the economic relations between the countries of European union, more so between members of Eurozone. German unit labour cost policy has been as imbalanced as the policies of the debtors. This fact cannot be neglected in full account of the causes of the crisis.

The treatment prescribed to debtor economies has been successful to a degree - the imbalances continue to diminish and that is key for preservation of the Eurozone. Nevertheless, the applied austerity measures left behind economies with high unemployment, low GDP growth or outright recession, and political instabilities in these countries. Furthermore, the adjustment in debtor economies has so far not been complemented by a similar adjustment by the creditor economies. In fact, Germany is a strong opponent of any kind of adjustment to be made by the creditor side. This is a very dangerous stance, as extensive adjustment only done by the debtors to meet the German

standard of stagnant labour cost policy can cripple them for several years, perhaps even decades. That is not in the best interest of Germany itself, as 30% of its export ends in Eurozone countries and the survival of the monetary union is vital for the country. The long-term sustainability of the monetary union depends on further reforms, as mere austerity measures cannot actively counter the rise of new imbalances in the future. This can be attained, to some extent, by sensitively chosen and applied fiscal transfers which incite constant effort for internal balance in the internal economy of Eurozone, combined with automatic stabilizers which would automatically be applied against imbalances which inevitably arise.

The thesis strived for a complex analysis of the crisis period, taking into account as many economic indicators and alternative causes or consequences as possible. It also aimed for an analysis of follow-up possibilities for policy mix that could be used in the future and that could be more effective than the one used so far. Sadly, it proved impossible to quantify precisely the repercussions of these possible policies, for example a scenario where one of the member countries leaves the Eurozone. In the future, the thesis can be well complemented by a research investigating if the countries who remained in a monetary union and conducted internal devaluation perform better than the ones who left and applied external devaluation. The data used for such countries could be obtained from historical currency zones, which in many aspects work similarly to monetary union, especially in the balance of payments area such as Bretton-Woods or EMS.

7. Appendix: regression output

Oneway (individual) effect within Model

Call:

```
plm(formula = unit.labour.costs ~ relative.GDP + inflation +  
c.cf, data = abc, model = "within")
```

Balanced Panel: n=6, T=6, N=36

Residuals :

Min.	1st Qu.	Median	3rd Qu.	Max.
-0.05300	-0.01490	0.00322	0.01720	0.04900

Coefficients :

	Estimate	Std. Error	t-value	Pr(> t)	
relative.GDP	0.928031	0.205462	4.5168	0.0001115	***
inflation	0.881181	0.374155	2.3551	0.0260382	*
c.cf	0.307963	0.051117	6.0247	1.983e-06	***

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Total Sum of Squares: 0.10765

Residual Sum of Squares: 0.024342

R-Squared : 0.77388

Adj. R-Squared : 0.58041

F-statistic: 30.8026 on 3 and 27 DF, p-value: 7.2697e-09

8. References

- Bastasin, C. (2013), Germany: A Global Miracle and a European Challenge
- Bibow, J. (2012), The Euro Debt Crisis and Germany's Euro Trilemma
- Bindseil, U., Koenig, P.J. (2011), The Economics of TARGET2 Balances
- Boltho, A., Eichengreen, B. (2008), The Economic Impact of European Integration
- Bouvard, F., Rambert, L., Romanello, L., Studer, N. (2013), How have the Hartz reforms shaped the German labour market?
- Busl, C., Seymen, A. (2013), The German Labour Market Reforms in a European Context: A DSGE Analysis
- Dědek, O. (2008), Historie evropské měnové integrace: Od národních měn k euru
- Dědek, O. (2013), Doba Eura - Úspěchy i nezdary společné evropské měny
- Goodhart, C.A.E. (1998), The Two Concepts of Money: Implications for the Analysis of Optimal Currency Areas
- Hüfner, F., C. Klein (2012), The German Labour Market: Preparing for the Future
- Jacobi, L., Kluve, J. (2007), Before and After the Hartz Reforms: The Performance of Active Labour Market Policy in Germany
- Koske, I., Wörgötter, A. (2010), Germany's growth potential, structural reforms and global imbalances
- Koske, I. (2010), After the crisis: Bringing German public finances back to a sustainable path
- Krieger-Boden, C., Soltweder, R. (2010), European Economic Integration in Econometric Modeling – Concepts, Measures and Illustration
- de Mooij, R., Keen, M. (2012), Fiscal Devaluation and Fiscal Consolidation: The VAT in Troubled Times
- Mundell, R.A. (1961), A Theory of Optimum Currency Areas
- Sarrazin, T. (2012), Europa Braucht den Euro Nicht
- Sinn, H.W. (2011), The ECB's Secret Bailout Strategy

Staal, E.R. (1999), European Monetary Union: The German Political-Economic Trilemma

www.oecd.com

<http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/>

www.destatis.de

www.bundesbank.de

www.ecb.europa.eu

www.wto.org

www.ft.com