# Fiscal Federalism: Eurozone Budget and Its Stabilization function

## Working paper

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## Abstract

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The main goal of this working paper is to design Eurozone budget that would be able to perform stabilization function and thereby help Eurozone member states overcome temporary asymmetric shocks in times of financial and economic crisis. This is quite a new, attractive and frequently discussed topic in the scientific community. The literature overview includes description of principle of fiscal federalism and up-to-date scientific articles dedicated to stabilization function of a budget, European budgetary structures and other issues relevant for the Eurozone budget design.
Section results contains concrete steps to design Eurozone budget, namely identification of its size and also description and quantification of individual revenues and expenditures of the Eurozone budget. Eurozone unemployment scheme consisting of Eurozone payroll tax and unemployment benefits represents autonomous and the most important part of the budget. In this working paper, also net gainers and net contributors of the Eurozone unemployment scheme are calculated and analyzed. The identification of net gainers and net contributors of the Eurozone unemployment scheme is what makes this article unique and special. Eurozone budget is commented and analyzed as a whole in recommendations and discussion and a few important topics of further research are identified in the conclusion of this working paper.

## Keywords

# 1 Introduction

In 2007, the financial crisis began in the United States of America. Later on, it spread out of the US to the whole world. Europe and particularly Eurozone has been hit by the economic and financial crisis quite severally. The whole European Union has suffered from recession and some countries of the Eurozone, namely Greece, Italy, Portugal, Ireland and Spain have undergone severe economic problems caused by a typical asymmetric shock and are still having big problems in fighting the economic crisis. Unfortunately, European budgetary structures have not been designed to perform stabilization function during financial and economic crisis and Eurozone was therefore not prepared to perform stabilization function for the member states in need. Greece, Portugal and Ireland have been receiving financial support from other Eurozone members or from IMF in order to keep off the danger of default. During the crisis, lack of stabilization function has been discovered and this issue was addressed by quickly creating stabilization mechanisms that did not have a form of a budget. Financial aid to above mentioned countries came from European Financial Stabilization Mechanism (EFSM) that has been activated for Ireland and Portugal for a total amount of 48.5 billion EUR in the years 2011 – 2013 and from European Financial Stability Facility (EFSF) that was created as a temporary rescue mechanism for the ensuring financial stability in Europe. In 2012, new and permanent mechanism for crisis management called European Stability Mechanism (ESM) was created. ESM should replace EFSM and EFSF and be the main tool in fighting financial difficulties in the Eurozone. With a maximum lending capacity of 500 billion EUR, it has a much higher amount of capital for rescue operations. In contrast to European Union, the United States of America has managed to come out of the financial and economic crisis better and smoother since the US GDP has been growing since the year 2010. The decline of American GDP occurred in 2008 and in 2009 but after that the American GDP has been growing again. Similarly, Eurozone firstly entered recession in the 2009. However, after a mild GDP growth, Eurozone has entered recession again in 2012 and up until the end of 2013 the GDP of the Eurozone has been declining. (1), (2), (3)

In this working paper I would like to take a close look at how the stabilization function could be embedded into European budgetary structures in order to fight future financial and economic crisis. The outcome of this working paper should be a functioning Eurozone budget based on an unemployment scheme that performs stabilization function for the Eurozone in times of economic crisis. Also, net gainers and net contributors of the unemployment scheme should be quantified and analyzed. Creation of Eurozone budget does not mean that the EU budget should be abolished. The function of the EU budget is completely different than the functions of the proposed budget of the Eurozone so the creation of the Eurozone budget does not have any influence on the budget of the European Union.

In the literature overview, scientific articles important for the design of the Eurozone budget are stated. Methodology contains information about how the budget is exactly computed, sections results and recommendations include description and interpretation of revenues and expenditures of the budget and discussions and conclusions include overall evaluation of the budget and topics for further research.

# 2  Literature overview

This sections includes most important articles and papers dedicated to the topic of EU budgeting and Eurozone budget.

## 2.1   EU Budget: the need to use an aggregate approach

In the following paragraphs, benefits of adopting an aggregate approach[1] in the European finances are described. Using aggregate approach means having a clear picture of public finance at the European level. The first benefit is that aggregate approach allows us to see and analyze overall level of public spending in the European Union and enables to better assess main financial priorities. Moreover, aggregate information about European public spending help indentify key sectors where political cooperation on European level can be strengthened. Additionally, using aggregate approach it is possible to compare central and national public spending of EU and other countries. Based on such comparison and fully functioning fiscal union, recommendations for the European Union can be derived. The current state of multi-level structure of public finance in the European Union is in certain areas very different from the structure of public finance in the United States, Switzerland or Canada. In the following paragraphs and figures, central and national public finance of the EU will be compared and confronted with the public finance in the US, Switzerland and Canada. These three countries have been chosen from the following reasons. First of all, these countries are fiscal federations with the comparable economic advancement as the advancement of Eurozone. Secondly, these have also firstly created monetary union and after that a fiscal union. The third reason for comparison with US, Switzerland and Canada is the fact that it enables comparison with both very centralized fiscal federation (United States) and a very decentralized structures with large autonomy of lower levels of government (Switzerland and Canada). (4)

From the table 1, it can be seen that public spending in total in the EU is higher than public spending in US, Canada and Switzerland. It can be clearly seen that the EU is exceptional in very low central public spending reaching only 1 % of the GDP. All three benchmarks have public spending between 10 and 25 % of their GDPs. In other words, we can state that EU budget is extremely small and that EU national budgets are in contrast very big (45 % of the GDP). So member state budgets cover almost 98 % of the total public expenditures in the European Union. (4)

Table 1: Public spending at total and central level as a % of GDP (2008)

|                          | EU    | US    | Canada | Switzerland |
|--------------------------|-------|-------|--------|-------------|
| Total public spending    | 46 %  | 33 %  | 37 %   | 34 %        |
| Central public spending  | 1%    | 25 %  | 22 %   | 11 %        |

**Source: Eurostat, OECD, (4)**

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[1] In this context, aggregate approach means deepening national and European coordination in public spending, increasing multi-level governance and thereby using the public expenditure in a more powerful way.

The huge difference in sizes of central budgets can be also clearly seen in the figure 1. The figure show that European budget is simply too small to be able to finance areas that are usually and predominantly financed by central public spending. In the US and Canada, social welfare is predominantly financed from central budgets. On the other hand, in case of the EU it is entirely financed from the national or regional budgets. Same pattern can be seen in the expenditures for research and development and external relations where European budget fails to finance these areas despite the fact that these areas are financed centrally in the other federations. (4)
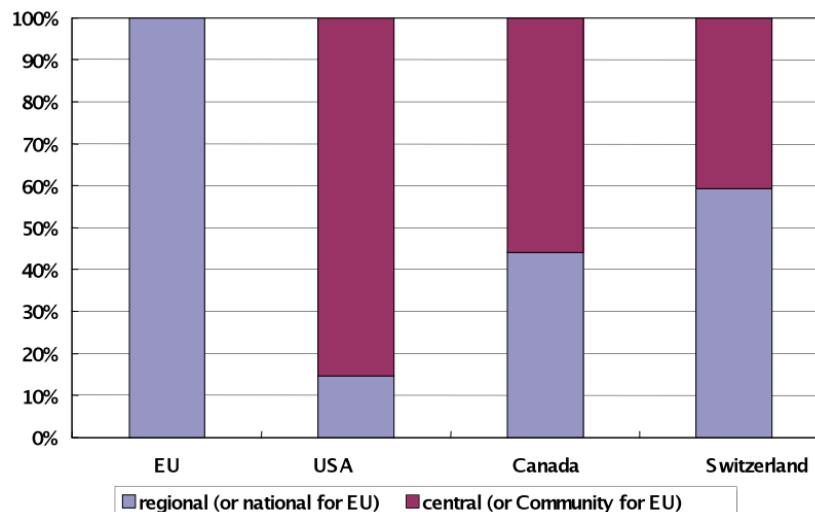


Figure 1: Distribution of spending for social welfare in 2008 as a % of tot. public spending
**Source: Eurostat, OECD, (4)**

Heterogeneity among member states of the European Union is the main obstacle in centralizing spending under the budget of the European Union. The larger the heterogeneity is, the more complicated it is to create any common European policy. For instance, the heterogeneity in health care system or social welfare is substantial which means that centralizing spending in these areas at a European level is not very probable. On the other hand, some issues where member states tend to have similar strategies such as environmental policy would be suitable for the central financing from the European budget.

## 2.2   Lessons from the Crisis for the EU Budget

This section is based on ideas and articles by Sebastian Dullien and Daniela Schwartzer, professors at HTW Berlin and Hertie School of Governance respectively. In 2009, when the European Union was hit by the financial and economic crisis, national governments created extensive stimulus packages to help overcome the impacts of the crisis. However, such stimulus packages lacked coordination on a European level and stabilization efforts of countries such as Spain or Ireland were hindered by increased market pressure on their bond interest rates. As a result, the economic downturn of the Eurozone was made worse and unfortunately, the European Union had no means to prevent such

situation. Economic differences in the Euro Area played an important role in causing the periphery countries very sensitive to the crisis. The above mentioned development discovers a need to re-think and redesign fiscal stabilization mechanisms in the Eurozone. The reason behind this is that individual member states fail to run successful stabilization policies themselves and therefore a centrally organized fiscal stabilization tools have to be put into operation in the Eurozone. (5), (6), (7)

Stabilization function of the EU budget requires changes both on the income and expenditure side of the budget. On the income side, new financial resources are needed to ensure the stabilization function. These resources could be achieved through common EU taxes, for instance EU corporate tax or EU income tax. Introducing a progressive personal income tax would probably provide the best stabilization effect. However, it is important to mention that introducing a progressive income tax on the European level would be extremely complicated if not impossible due it big differences in national tax systems. Also, this solution is for the time being not politically acceptable. Therefore, the EU corporate tax would be the second best possible solution. It would perform the role of cyclical source of revenue and additionally, it would also allow introducing a minimal level of taxation and thereby restricting the inner tax competition among the member states low tax rate states like Ireland that subsequently receive financial aid from the states with higher level taxation such as Germany. Similarly to the federal system of states in the US, common European corporate tax would limit the harmful tax competition and simultaneously still allow a certain degree of the competition. (5)

However, it is very important to state that common corporate income tax on a European level is almost impossible to be achieved in the near future from the following reasons. The biggest obstacle for creating a common European corporate tax is the absence of harmonization and calculations of tax bases across individual member states. Furthermore, in some countries corporate income tax is related with personal income tax. So for such member states, creating European corporate tax would also mean influencing the personal income tax. Removing the above mentioned obstacle and harmonizing the tax bases across Eurozone would be a very long and complicated process and no political will exists to pursue this process further in the near future. From the reasons stated above, common corporate income tax will not be taken into account while designing the revenues of the Eurozone's budget because it is simply not realistic and it would be incredibly hard to quantify the possible revenues from such tax as there are differences in tax systems and calculations of tax bases in individual member countries. (8)

Last but not least, a so called pillar of automatic stabilization should be put into operation.[2] This could be introduced by European unemployment insurance scheme to support the national unemployment systems of the member states which us also currently discussed at the European level in the European Commissioner for Employment, Social Affairs and Inclusion Mr. Lászlo Andor. Member states would still manage their unemployment system and European scheme would just help diminish effects of cycli-

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[2] Automatic stabilization means a system which stabilized temporary asymmetric shocks of member states.

cal unemployment. For all employees in participating countries, a certain level of payroll tax estimated to be in the amount of 2 % should be collected. From the money collected by the European unemployment scheme, employees who paid the European payroll tax for more than a year would be allowed to receive benefits up to half of their last salary for the period of 6 to 12 months. The European unemployment scheme would partly replace the national systems but these would still be in operation reflecting the national differences and social security systems. Such system would perform stabilization function since people in regions severely hit by the economic crisis would receive support from a financial pool to which employees from all member states contribute. Therefore, this scheme would help decrease asymmetric shocks and fight cyclical unemployment only. The overall amount of financial resources required to achieve significant stabilization effects in the unemployment insurance does not have to be very big. According to the American economist Lawrence Chimerine, US unemployment insurance is said stabilize approximately 15 % of GDP fluctuations under only about 0.4 % move of GDP each year. (5)

The stabilization function of the budget needs to address not only discrepancies among individual regions but also across time. In order to ensure this, the Eurozone needs to be allowed to build up financial reserves in economic upswings and use them in time of economic downswings. However, it is important to consider the political aspect of financial aid given to the member states in a downturn period. There is a danger that countries would not use the given aid to fight economic crisis. Countries suffering from very high deficits might use the additional funds for budget consolidation in order to have the possibility for additional spending or tax cuts just before the next elections which would not serve the primary purpose of business cycle stabilization.

The problem is that the European budget was never designed to have a stabilizing function but already the Treaty of the European Union containing the principles of achieving the convergence of the economies has indicated a possible stabilization function of the European institutions. The degree of redistribution in the most of the European countries is relatively high and therefore it does not make sense to create a brand new tax that would increase the tax burden. Therefore, the only option is to transfer part of the tax revenues from the member states to the Eurozone budget. (5)

The next paragraphs are dedicated to Eurozone and the reasons why it might be reasonable to have a common budget of the Europe's monetary union.

## 2.3 Missing stabilizers in Eurozone

At the time when Eurozone was created, stabilizing mechanisms at a level of the member countries have been to some extend abolished since member states have lost their autonomy in monetary and exchange rate policy and their central banks have lost a role of the lender of last resort since countries issue debt in a common currency that is under a control of the European Central Bank. So countries cannot guarantee anymore that cash will always be available to pay out the bonds at maturity. Economists suggest that fiscal union would increase a stability of the Eurozone. Paul de Grauwe stated that "Euro is a currency without a country" and that "Eurozone without a common budget is like a house without a protecting roof". (9) In order to bring stability into the Eurozone,

a country should be created and basic pillar of a country is a central authority that is able to collect taxes and use financial resources for spending in the scope of the whole union. This is connected with substantial federal budget. However, this process suffers from very limited willingness of national states to transfer the right to collect taxes to the European institutions and also a problem of moral hazard. Since there is no political will to make substantial and fast steps towards the fiscal union, a policy of small steps should be performed. (9), (10)

## 2.4   A budget for Europe's monetary union

Usually, federations have substantial federal budget that exercises important budgetary functions at the central level. Eurozone is technically not a federation but it has common fiscal rules and policies that have developed as a response to the financial and economic crisis in order to enable countries better overcome country specific shocks under conditions of monetary union. What is more, there have been some ideas regarding the more integrated budgetary framework for the Eurozone since the stabilization function works better while performed at the federal level. If a federation-wide shock occurs, the stabilization measures should be done by the federal budget. If the shock occurs in all national economies simultaneously it tends to be inadequately resolved by the national policies. The main reasoning behind this is that national governments tend to rely on fiscal response of the neighboring countries and hesitate to provide big enough response and want to become free-riders or policies of neighbors. If no strong coordination mechanisms among regional fiscal policies exist regional fiscal policy is weaker than the federal one. Another important role of federal budget is the provision of federal public goods such as security, environmental issues etc. However, most of federal public goods in Europe are connected with the European Union and its single market and not with Eurozone. (11)

The Eurozone budget should be designed under the principle of distributional neutrality which means there should be no net transfers in a certain given period. In other words, there could be net transfers to a state negatively influenced by the economic shock but in the long run the net received payments of such state should be equal to zero. Only temporary shocks should be compensated and no permanent shocks should be created. Organization of Eurozone's budget revenues is another important issue to be addressed. Revenues might either flow from the national budgets of the member states or they could be collected in form of some European tax. If revenues should be used as a stabilization instrument, they should be somehow linked to income or consumption. Richer countries should contribute with the greater extent than less developed countries since they would require larger support in case of an economic crisis. The principle of solidarity is established in the European Union from the very beginning and Eurozone budget should also reflect this principle. Therefore, contributions on per capita basis do not seem very reasonable. (11)

Finally, the Eurozone budget should be made for all Euro countries plus all countries with fixed Euro exchange rate and countries that are in the process of preparation for Euro acceptance. In order to fight substantial and wide economic shocks and stabilize the economy, Eurozone should be able to borrow money on the capital mar-

kets. However, a possible misuse of federal financing could lead to increasing federal debt without any boundaries and problem of misusing. From this reason, strict limits on federal borrowing should be introduced. One possibility to do this is to impose a rule of structural balanced budget or to establish an independent institution controlling the new budget and federal borrowing. (11)

## 2.5  Creating Eurozone budget as a stabilization tool

During the recent financial end economic crisis, the idea of creating a separate budget for the Eurozone has been created and possible features of Eurozone budget have been discussed. The crisis has already given an incentive to create financial instruments such as European Financial Stability Facility and European Stability Mechanism. These instruments have been created in order to provide financial support Eurozone countries that are suffering from liquidity crisis. However, it is important to say that these instruments do not have a structure and design of a budget which is composed by revenues and expenditures. These are rather intergovernmental instruments providing money to Eurozone countries that are having troubles with borrowing on capital markets. One of the main functions of newly created Eurozone budget should be the macroeconomic stabilization function. The budget should provide financial assistance to member states in case an asymmetric shock occurs. The funds should be exclusively reserved for the member states and the need for a cyclical adjustment is closely connected to the fact that member countries of a common currency area have substantially reduced possibilities to stabilize their economies due to inability to use their own monetary and exchange rate policies. From this reason, countries outside Eurozone do not feel such an urgent need to be part of such insurance scheme since they can use their own monetary and exchange rate policies to help the economy achieve equilibrium. (12)

If Eurozone budget should represent a tool for stabilization of cyclical shocks, it is important to prevent any permanent and unjustified and hidden transfers of financial resources because in such a case rich countries will not accept it. In order to prevent this from happening, all member countries should contribute into the fund during economic boom. Secondly, the scheme for financial aid should work in a largely automatic manner and distribute financial aid based on strictly objective criteria with no direct political influence. The criterion for instance might be a change in growth rate compared to other member states. Furthermore, the total amount a country could receive should be limited. If above mentioned conditions are met, the scheme should be balanced in the medium term. The budget should be financed by contributions from the national budgets of individual member countries. (12)

## 2.6  Financial transaction tax

The idea of common European tax from financial transactions came back to life after recent financial crisis. Due to a danger of global financial collapse, enormous financial injections have been put to the financial system by governments in order to prevent the

global financial system from collapsing. The financial system has been relatively successfully stabilized but this stabilization brought a problem of huge costs to rescue financial sector to be addressed. An absence of fair and substantial contribution of the financial sector that would cover costs of rescuing the financial system in times of financial crisis was the key driving factor of European financial transaction tax. When the fair and substantial contribution of the financial system is missing member states are forced to raise taxes in other areas or to cut public spending in order to cover the costs necessary for financial system stabilization. Due to a perfect mobility of capital and growing internationalization of financial transactions and institutions, it is absolutely necessary that the tax from financial operations is internationally coordinated in order to ensure effectiveness of such tax. (13), (14)

Based on the information above, European Commission issued a proposal. The proposal has two major objectives was prepared for 11 member states of the Eurozone[3]. First objective is to harmonize indirect tax legislation. Second and most important objective is to establish fair and substantial contribution of the financial sector. The secondary objective is to create disincentives for certain financial transactions that do not support stability of financial markets. The proposal includes taxation of securities trading and derivates at two different rates. Trading of securities that includes trading of bonds and shares is to be taxed by 0.1 % of the market price and tax is paid by financial institutions that are involved in the transaction. The tax rate of derivate agreements was set to be 0.01 % of the notional amount underlying the product and is also paid by financial institutions involved. The tax from financial transactions is not applicable for private households and small and medium enterprises. The preliminary estimates of the budgetary implication of the financial transaction tax in 11 EU member states was estimated to be between 30 to 35 billion EUR per year. (14), (15), (16)

## 2.7   Size of a budget performing stabilization function

This section of the working paper is dedicated to discovering an optimal size of a budget that would be able to perform a stabilization function. Below mentioned information will be used as a benchmark and basis for stating the size of Eurozone budget in the further pages of this working paper.

### 2.7.1   MacDougall Report

Report of the Study Group on the Role of Public Finance in European Integration, more commonly known as so called MacDougall Report was written in 1977 by a group of independent economists who were asked by the European Commission to look at role of public finance at a European level. The report examines federal budget in the EU in three stages, namely pre-federal stage, later stage and full federation stage. For the purposes of this working paper, only pre-federal stage will be taken into account since current state of the Eurozone is most similar to the pre-federal stage and therefore information about this stage are the most relevant for the goal of the working paper. Fur-

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[3] Member states requesting participation in European Union financial transaction tax: Austria, Belgium, Estonia France, Germany, Greece, Italy, Portugal, Slovakia, Slovenia Spain

thermore, according to the restriction conditions of this working paper, only stabilization function is taken into account and allocation function and redistribution function are out of the scope of this working paper. (18), (19)

According to the report, the size of the common federal budget should be at least 2% of the GDP in order to be able to play some role in the stabilization policy. In comparison to fully functioning federations as United States and Germany where the size of public expenditures on the community level were around 25% of the GPD, it is obvious that common European budget with size of just 2% of GDP could not fully and solely perform stabilization function itself and should be accompanied by stabilization functions of the national budgets. The report suggests that the largest component of the budget would be used for equalization mechanisms between the weaker member states and richer member states and there would also be mechanism for supporting fight against unemployment. (18), (20)

### 2.7.2   Size of European stabilization mechanisms

The aim of this section is to find out, what is the overall size of non-budgetary European stabilization mechanisms that have been created as a response to recent financial and economic crisis. The size will be measured as a proportion to GDP of the Eurozone. There exist three different stabilization mechanisms, namely the European Stability Mechanism (ESM), European Financial Stability Facility (EFSF) and European Financial Stabilization Mechanism (EFSM).

Via EFSM, European Commission is able to borrow up to the amount of 60 billion EUR in the financial markets on behalf of the European Union that provides a guarantee from the EU budget. European Commission can subsequently lend borrowed money to the member states in need. European Union does not bear any costs connected to debt servicing since the loan is repaid by the member state that borrows money from the EFSM. European Union budget only guarantees the repayment of the loan in case the member state fails to service its debt and defaults. In the recent years, EFSM has been used for Ireland and Portugal and the total amount of borrowings to these two countries reach 48.5 billion EUR that have been distributed between the years 2011 and 2013. (21)

European Stability Mechanism (ESM) is currently the most important tool of the Eurozone to ensure and establish financial stability. Similarly to the EFSM, the purpose of ESM is to provide financial assistance to the members of Eurozone that experience financial difficulties. After the EFSF described below ceases to exist ESM will remain to be the only mechanism ensuring financial stability in the Eurozone. In order to fulfill its function, ESM issues debt with maturity of up to 30 years and member stated provide their contribution in the amount of 80 billion EUR to create an insurance mechanism. The member states of the Eurozone are also the shareholders of the ESM. The total lending capacity of the ESM is 500 billion EUR which is more than eight times bigger amount than EFSM. (22), (23), (24)

European Financial Stability Facility (EFSF) came into existence in May 2010 in order to provide financial help to the members of Eurozone under the framework of macro-economic adjustment program. However, it is important to mention that EFSF was a temporary mechanism and in 2012 it was replaced by permanent rescue mecha-

nism ESM that is described above. EFSF issued bonds on capital markets and subsequently lent gathered financial resources to member states in need. EFSF could also take actions in both primary and secondary bond markets. The total capacity of the EFSF is 188.3 billion EUR of which 176.1 billion has already been used to predominantly help Greece but also Portugal and Ireland. (25), (26)

Table 2: Size of Eurozone's stabilization programs in billion EUR

| Stabilization program | Size in billion EUR |
| --- | --- |
| European Financial Stabilization Mechanism (EFSM) | 60 |
| European Stability Mechanism (ESM) | 500 |
| European Financial Stability Facility (EFSF) | 188.3 |

**Source: Own elaboration, (21), (24), (26)**

Since EFSM and EFSF will cease to exist and ESM will be the only stabilization mechanism in the future, EFSM and EFSF will not be taken into account while calculating the size of the European stabilization programs and only ESM will be considered to be the basis for calculation of size of the stabilization program. European Stability Mechanism has a capacity of 500 billion EUR. The GDP of the Eurozone at market prices in 2013 was 9,574.4 billion EUR. So it can be easily computed that ESM equals to 5.22 % of the Eurozone's GDP. (27)

## 2.8  Unemployment benefits in EU member states

This chapter of the working paper is dedicated to unemployment benefits in European Union and it is very relevant for the section results since unemployment support is considered to be one of the main expenditures of the Eurozone budget and information about existing unemployment benefits will serve as a starting point for establishing Eurozone wide unemployment benefit scheme financed from the Eurozone budget.

Unemployment benefits in the European Union have two important aspects. The first one is the replacement rate which means how big the unemployment support is in proportion to the wage. The second important aspect is the duration which means for how long the unemployed person receives unemployment support. Based on these two indicators, together with the unemployment rates and average wages, an amount of total costs of unemployment benefits can be quantified which will be done in the sections results.

The net replacement rates in the European Union vary substantially as it can be seen in figure 2. (28)
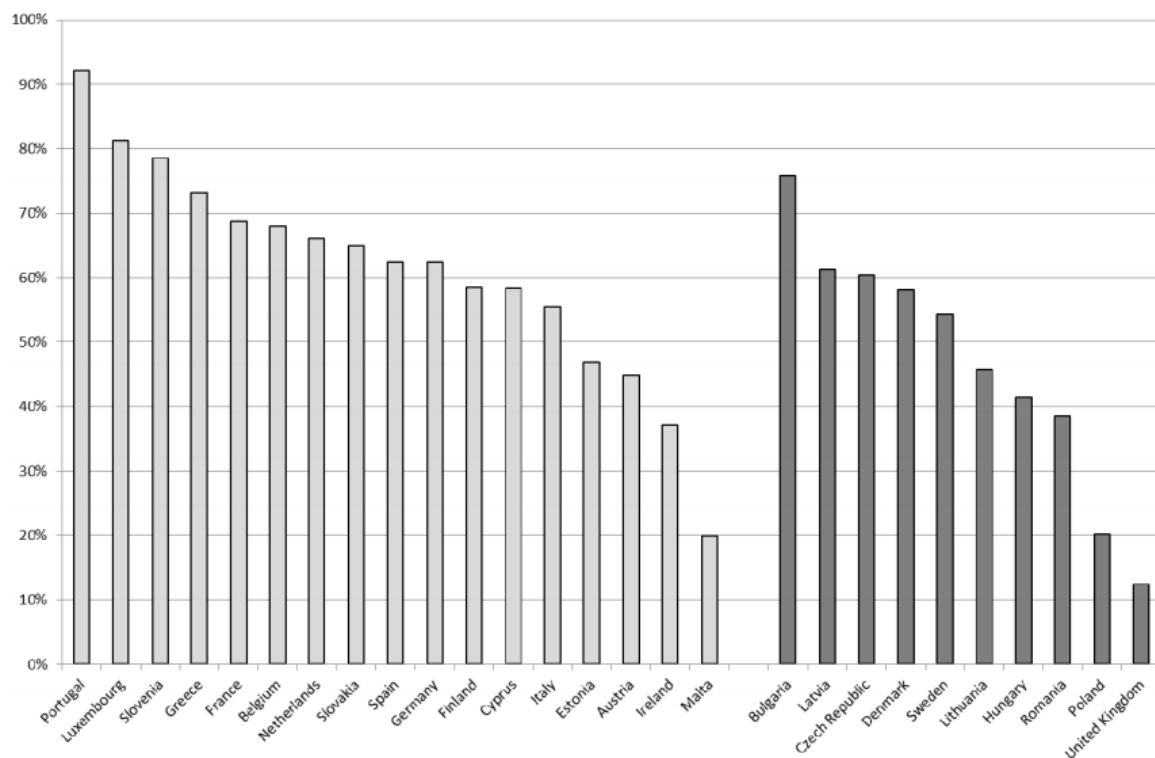
Figure 2: Net replacement rates in EU member states in 2010
**Source: (28)**

Portugal is the country with highest net replacement rates from all member states and the rate reaches 92 %. On the other hand, net replacement rate reaches only 12 % in the United Kingdom. All in all, we can say that most of the Eurozone countries have the net replacement rates around 60 % of the wage and this number will be used as a reference value for the section results of this working paper. The figure 2 also shows that net replacement in the Eurozone tends to be little bit higher than net replacement in countries that are not members of the Eurozone. (28)

# 3  Data and methods

All the data needed for the design of the Eurozone budget are available at the attachment of this working paper.

For the purposes of the calculations, values and figures from the year 2012 are used because it is the most recent year when all the necessary data and information are available. A ceteris paribus condition is applied for the calculations and predictions of development of the data in the future years. It means that the changes of variables such as GDP, unemployment rate, wages, number of financial transactions and similar are omitted and left out from the model of Eurozone budget and it is always calculated with the data from the year 2012 and theses values are perceived to be fixed.

First step is to determine the size of the budget. This is done based on articles and reports stated in the literature review of this working paper, namely based on current European stabilization mechanisms that amount to 5.22 % of the GDP of the European Union member countries and based on MacDougall report which states that the size of a budget that performs stabilization function should be at least 2% of the GDP. While taking into consideration these two values, the size of the Eurozone budget was set to be 3 % of the GDP of the Eurozone member states.

The second step is to design and quantify Eurozone budget revenues. Based on the relevant scientific articles from the literature review, three sources of revenues were stated and quantified. The first source of revenue is contributions of national budgets of the Eurozone countries. Necessary data such as GDP of member countries in current prices and GDP per capita have been taken from the Eurostat and can be found on in the attachment of this working paper. GDP per capita serves as a coefficient for contribution and includes the solidarity within the budgetary structure. It means that richer countries that have higher GDP per capita contribute more from their national budgets than countries that are poorer. The formula for computing the contributions of national budgets is following. The GPD in current prices of a country is multiplied by the coefficient for contribution (GDP per capita) and the result is multiplied by the contribution rate which was set out to be 0.9 %. This is the principle of the first source of revenue.

The second source of revenue is Eurozone payroll tax. Again, data for computation of this revenue, namely productive population 15-65 in individual member states, unemployment rate and average annual wage have been taken from Eurostat. All the data come from the year 2012 which is the most recent year where all the necessary data have been available. From the productive population and unemployment rate, the actual number of employed people was easily computed. The payroll tax rate was set to be 2.5 % from the annual wage. So the second source of revenue is quantified as number of employed people times average annual wage times tax rate of 2.5%.

Tax from financial transactions is the third and final source of revenue. The model of financial transaction was developed for 11 countries of the European Union and is stated in literature review of this working paper. Exactly the same model was applied for the Eurozone. The revenue coming from tax from financial transaction in 11 countries was expected to be between 30 and 35 billion EUR. So the middle value of 32.5 billion EUR was taken as a reference number and the model was applied to the whole Eurozone using GDP for the purposes of recalculation.

On the expenditure side, there is one main source of expenditure, namely unemployment benefits. The calculation of unemployment benefits is the most complicated calculation done in this working paper. Data necessary for the computation have been taken from Eurostat and OECD and these data come from the year 2012 which is again the most recent year when all the data are available. From the productive population and unemployment rate, the number of unemployed people in individual member states is computed. From the study dedicated to unemployment benefits in Europe done by European Commission that is described in literature review of this working paper, some important values have been taken over. Namely it is the average net replacement of 60 % of the average wage. The average unemployment duration of four months has been found in OECD data.

So finally the unemployment benefits can be calculated as follows. Number of unemployed people is multiplied by four twelfths of the average wage because the average length of unemployment is 4 months. The product is further multiplied by 60 % since the net replacement rate was set out to be 60 % of the average wage. By doing so the annual expenditures for unemployment benefits are computed.

There are also other expenditures not representing typical budgetary expenditures that are paid out on an annual basis. Firstly, a Eurozone stabilization fund is to be created from the contributions of national budgets and revenues from financial transactions. The size of this stabilization fund was stated to be 500 billion EUR based on already existing European stabilization mechanisms described in the literature review of this working paper. Under the ceteris paribus principle described above, the period necessary to filling up the Eurozone stabilization mechanisms. Annually the contributions of national budgets and tax from financial transactions bring 132.2 billion EUR to the stabilization fund so the fund will be filled up after 4.78 years. After this period two scenarios of Eurozone expenditures are created and described in recommendations section of this working paper. The detailed elaboration of these scenarios is out of the scope of this working paper so the scenarios should be considered to serve as an inspiration for the further research.

# 4  Results

In this section, individual steps are taken in order to create a budget of the Eurozone. In the framework of this working paper, the budget is primarily and exclusively designed to permanently perform a stabilization function within the Eurozone member countries that would allow Eurozone to fight with future economic crisis more successfully than during last crisis that began in 2007.

Before defining and computing individual sources or budget revenue, the size of the budget needs to be determined. This is done based on MacDougall report and size of currently existing stabilization mechanisms that are described in the literature review of this working paper. As soon as the budget size is defined, individual sources or revenue are computed to meet the size objective. The revenue sources or the European budget are contributions of national budgets of the member states, Eurozone payroll tax, and tax from financial transactions. Subsequently, budget expenditures are quantified and calculated. Eurozone budget will use its revenues for unemployment benefits for unemployed people in the Eurozone and reserves for possible bail out or financial aid for member states in during economic downturn will be created and also for improving the competitiveness of the net gainers of the Eurozone budget.

## 4.1  Size of Eurozone budget

Size of the Eurozone budget is determined on the basis of MacDougall report and size of ESM to the GDP of the Eurozone. The MacDougal report states that in pre-federal stage, the size of the budget should be at least two percent of GDP in order to perform a stabilization function. In section 3.7.2 all currently existing European stabilization mechanisms were summed up and expressed as percentage of Eurozone GDP. As a result, it was computed that European stabilization mechanisms represent 5.22 % of Eurozone GDP. Based on the these two figures, value 3 % of GDP was taken as binding size of the Eurozone budget for further purposes of this working paper and calculations of revenues and expenditures.

Table 3: Size of Eurozone budget based on 2012 data

| | |
|---|---:|
| Eurozone GDP in 2012 (in billion EUR) | 9,574.4 |
| Relative size of Eurozone budget | 3 % |
| **Absolute size of Eurozone budget (in billion EUR)** | **285.2** |

**Source: Own elaboration, Eurostat**

Since both revenues and expenditures of the Eurozone budget will be stated in absolute values in monetary units, Table 3 was used to quantify the size of Eurozone budget in billion EUR. Since the Eurozone budget will be balanced, value 285.2 billion EUR will be targeted in both budget revenues and budget expenditures.

Furthermore, it is important to mention, that the Eurozone budget will be designed according to rule of no budget deficits (so called golden rule) which means that no budgetary deficit will be allowed in the Eurozone budget and this budget will always operate only with resources available from the obtained revenues.

## 4.2 Eurozone budget revenues

This chapter of the working paper is dedicated to Eurozone budget revenues. Based on the literature review, three sources of budget revenue have been identified, namely contributions of national budgets, Eurozone payroll tax and tax from financial transactions. Each source of revenue is briefly described and then concretely quantified. Full data and calculation sheets can be found in the attachment of this working paper.

### 4.2.1 Contributions of national budgets

The first source of revenues comes from contributions of national budgets of members of Eurozone. The contributions are computed based on following principle. The basic value of this revenue is the GDP of a member state. From the very beginning, process of European integration has been based on principle of solidarity and this principle is also used in this source of Eurozone budget revenues. The idea behind it is that richer member states should contribute more than the poorer ones. The richness of individual member states is measured by GDP per capita in purchasing power standards (PPS) from which a coefficient has been created by dividing the GDP per capita in PPS by 100. So if the member state has above average GDP per capita, the contribution from the national budget into the Eurozone budget is higher since the coefficient is greater than 1. Similarly, if Eurozone member state has below average GDP per capita, the contribution from the national budget into the Eurozone budget is lower since the coefficient is smaller than 1. By means of this coefficient, contribution rate of individual member states will be adjusted. The contribution rate was set to be 0.90 % and this is multiplied by the coefficient measuring the richness of a country. The GDP of a particular member state is than multiplied by the adjusted coefficient and the result is the actual contribution of individual member state into the Eurozone budget.[4]

Contributions are counted based on data from the year 2012 which is the most recent year with available data. The total revenues coming from the national budgets of Eurozone member states are 95.7 billion EUR which is almost exactly one third of the total budget size which means that this is a substantial source of revenue and an important part of the Eurozone budget.

Figure 3 shows how much each member state contributes from the national budget into the Eurozone budget. As it can be seen, Germany is by far the biggest contributor into the Eurozone budget contributing more than 30 % of the total contributions from the national budgets. Germany is followed by France, Italy and Spain with contributions 20.8%, 14.9 % and 9.3 % respectively. These four states contribute more than two thirds of the total contributions.

On the other hand, contributions of member states such as Cyprus, Estonia, Latvia, Malta, and Slovenia are very low and insignificant. The total contribution of these five states does not even reach 1 % of the total contributions from national budgets.

From these numbers and from the figure 3 it can be derived that the burden of revenues from the national budgets lies almost entirely on states as Germany, France,

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[4] All the data, formulas and detailed calalculations can be found in the attachment of this working paper.

Italy and Spain which is logical due to their size and advancement of the economies. It is important to mention that the richer and larger the member state is going to be the more money it is going to contribute to the Eurozone budget.
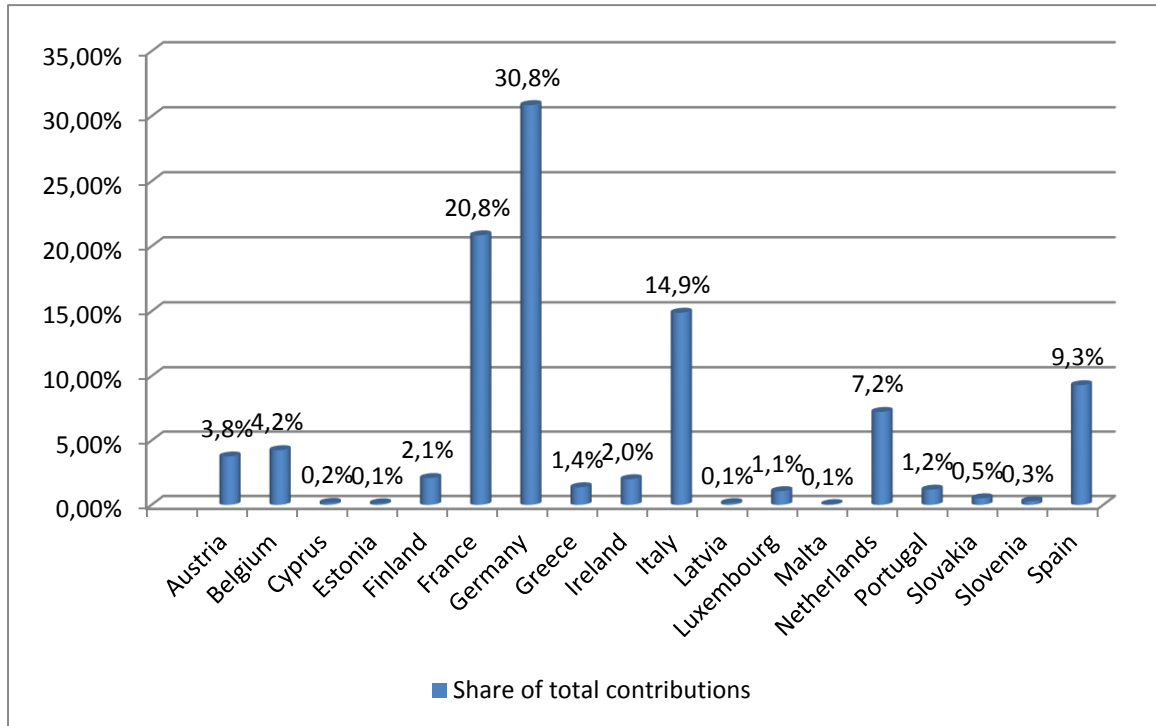


Figure 3: Contribution from national budgets of individual member states in % based on 2012 data
**Source: own elaboration**

Figure 4 shows the contribution from national budgets per inhabitants in productive age which is another interesting measure of evaluating contributions of individual member states of Eurozone. As it can be seen, Luxembourg has by far the highest contribution per inhabitant but it is important to say that this values is not very relevant and can be omitted since the GDP per capita of Luxembourg is very high due to the fact that many people from another countries work in Luxembourg without having their residence there. Apart from that it can be seen, that countries such as Austria, Belgium, Finland, Germany, Ireland and the Netherlands have their contributions between 550 and 650 EUR.

On the other hand, there is a number of countries whose contribution per inhabitant is less than 300 EUR. These countries include Baltic countries, Cyprus, Greece, Malta, Portugal, Slovakia, Slovenia and Spain.
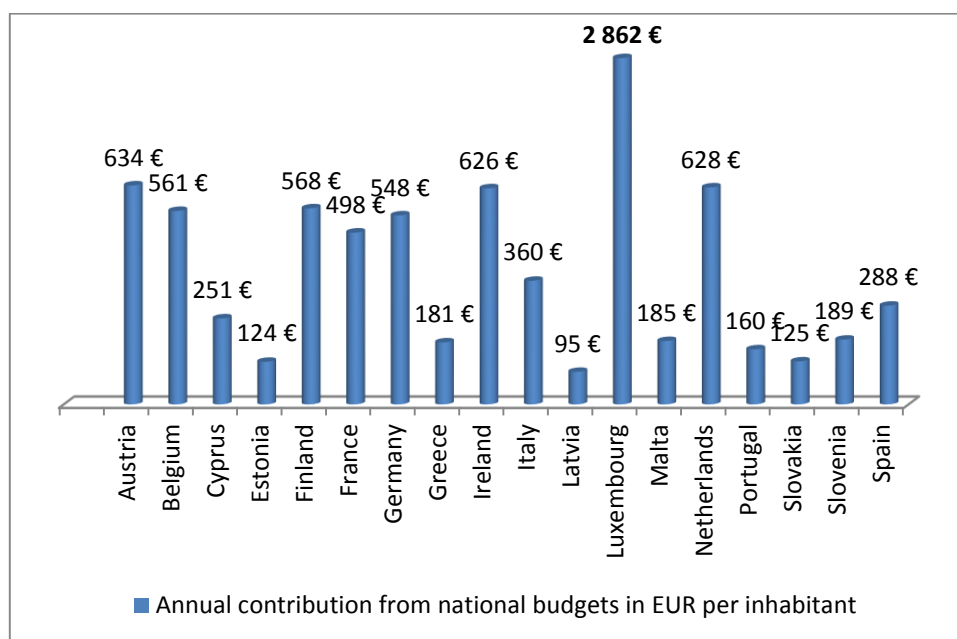
Figure 4: Annual contribution from national budgets in EUR per inhabitant based on 2012 data
**Source: own elaboration**

### 4.2.2    Eurozone payroll tax

The most important revenue for the Eurozone budget is Eurozone payroll tax. This tax is a good tool for stabilization function of a budget since the logic behind it is following. Employees pay part of their wages or salaries to the Eurozone budget in form of the payroll tax and unemployed people than receive unemployment support from the Eurozone budget instead of the national budgets. By establishing such system, Eurozone will be able to better react on asymmetric shocks and stabilization function in the Eurozone will be increased substantially. When there is asymmetric shock which means that for example in Germany the economy is growing and in Italy there is a recession, the unemployment in Germany decreases and unemployment in Italy increases. So in other words, Eurozone payroll tax revenues in Germany increase and unemployment support decreases. Exactly opposite scenario occurs in Italy where unemployment increases, Eurozone payroll revenues tax decrease and unemployment support increases. By including payroll tax and unemployment support within the common Eurozone budget, increased revenues from Eurozone payroll tax in Germany will be in fact used for increased demand for unemployment support in Italy which is exactly the purpose of stabilization function. Quantification of unemployment support is described in detail in chapter of the working paper that is dedicated to Eurozone budget expenditures.

The quantification of Eurozone payroll tax is based on following data from Eurozone member states: population in productive age, unemployment and average annual wage. Number of employed people was easily computed from the population in productive age and unemployment rate. European payroll tax rate was set to be 2.5 % and the annual revenue from payroll tax was simply calculated as multiplication of employed people, annual average wage and Eurozone payroll tax rate as described in the method-

ology and can be found in the attachment of this working paper. Altogether the revenues from Eurozone payroll tax should reach 155.1 billion EUR.[5]

Figure 5 shows relative shares of total contributions from payroll tax per member state in percent. The distribution of this revenue is very similar to the distribution of the first revenue (contributions from national budgets) and again Germany, France, Italy and Spain are the main contributors to the Eurozone budget in form of payroll tax.

However, in comparison to the distribution of the first source of revenue, it can be observed, that distribution of Eurozone payroll tax revenues is a little bit more equally distributed among the member states and the revenue burden on Germany is slightly lower (28.9 %) compared to the first source of revenue where it was 30.8 %. It is important to say that the distribution of contributions of individual member states will in fact change based on the change of variables such as unemployment, population etc. As it is written in the methodology of this working paper, changes in such variables are omitted in this working paper, condition of ceteris paribus is used and data from 2012 are taken as constant in time.
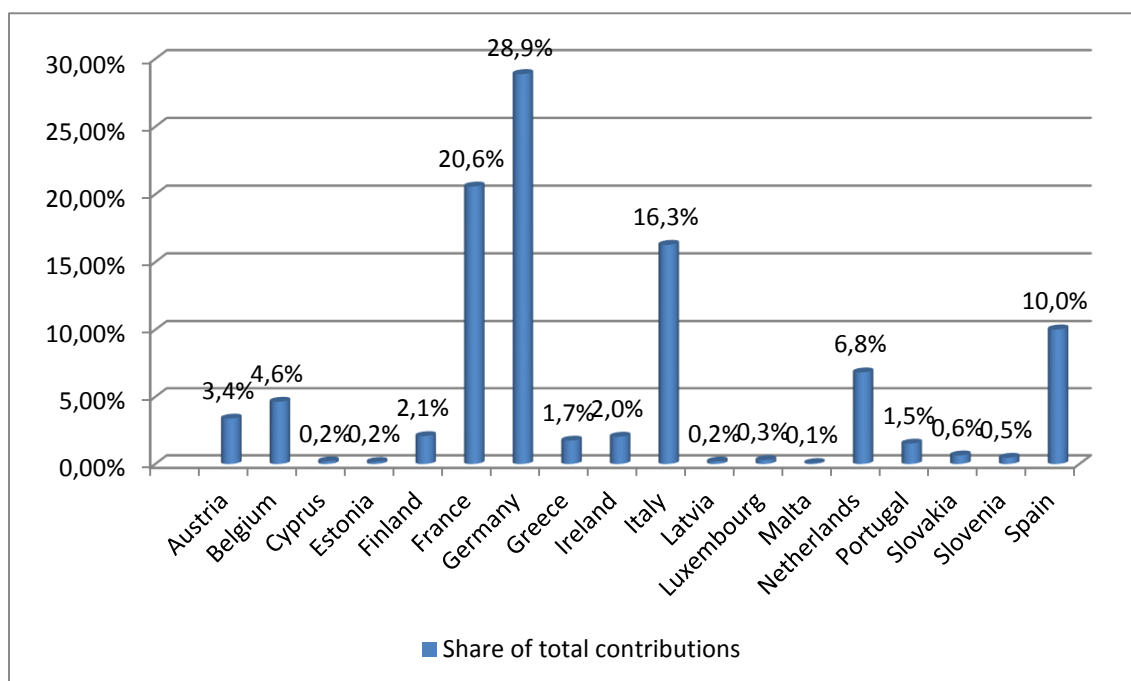


Figure 5: Annual revenues from Eurozone payroll tax per member state in % based on 2012 data
**Source: own elaboration**

### 4.2.3    Tax from financial transactions

The last source of revenue of the Eurozone budget is tax from financial transactions. The quantification of this tax is done based on the proposal of the European commission that is described in the literature review of this working paper. The commission

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[5] All the data, formulas and detailed calalculations can be found in the attachment of this working paper.

proposed a tax rate of 0.1 % from the market price on trading of securities (bond and stares) and tax rate of 0.01 % from the derivate agreements. The proposal counted a membership of 11 EU countries in the system of financial transaction tax. The estimated revenue per year from this tax given that 11 EU countries would participate was estimated to be between 30 and 35 billion EUR. For the purposes of calculation of the financial tax for the Eurozone the middle value 32.5 billion EUR was taken as a reference value.

The logic behind the computation is following. Values of GDP of 11 EU member states that were considered to be payers of tax from financial transactions have been summed up. Given that the estimated revenue from these 11 member countries is 32.5 billion EUR, a proportion of this amount to the sum of GDPs of participating countries was calculated to be 0.38 %. After that, this rate was applied on the total GDP of the whole Eurozone and the revenue from tax from financial transactions was calculated. So the total annual revenue based on GDP values from 2012 was calculated to be 36.5 billion EUR. In comparison to the first and second source of revenues, this revenue is very small. It is important to say that tax from financial transactions has a sense only in case all Eurozone introduce it at once.[6]

### 4.2.4 Total budget revenues

In the previous paragraphs, tables and charts, three different sources of revenues have been described, namely contributions of national budgets, Eurozone payroll tax and tax from financial transactions. Altogether, all three sources of revenues equal to the amount of 287.3 billion EUR which is computed in the table 4. This amount is only slightly higher than given size of the Eurozone budget that was stated to be 3 % of the Eurozone GDP which equals to 285.2 billion EUR. Therefore, it can be concluded that above mentioned sources of revenues have successfully reached the stated size of the budget.

Table 4: Share of individual revenues as a percentage of total revenues

| Budget revenue | Revenues in EUR billion | Share of revenues in % |
|---|---|---|
| Contributions of national budgets | 95.7 | 33,3% |
| Eurozone payroll tax | 155.1 | 54,0% |
| Tax from financial transactions | 36.5 | 12,7% |
| **Total** | **287.3** | **100,0%** |

**Source: Own elaboration**

Figure 6 shows the share of individual sources of revenues in the total revenues of Eurozone budget. As it can be seen, Eurozone budget will be predominantly dependent on the Eurozone payroll tax since revenues from this tax equal to 54 % of the total budget. Contributions from national budgets of Eurozone member states are the second most important source of revenues. These contributions equal to 33.3 % of the total revenues

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[6] All the data, formulas and detailed calalculations can be found in the attachment of this working paper.

and also play an important role. The third and smallest revenue is represented by the tax from financial transactions and equals to 12.7 % of the total revenues.
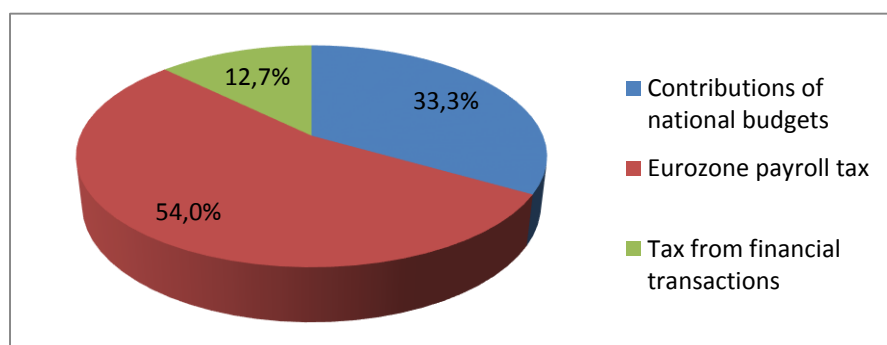


Figure 6: Share of individual sources of revenues in %
**Source: own elaboration**

## 4.3   Budget expenditures

Eurozone budget expenditures are divided into two major parts. First part is unemployment benefits paid out to unemployed people in member states. This part works as a classical annual budgetary expense. The unemployment scheme is designed to be balanced which means that annual expense in terms of unemployment benefits is designed to be roughly the same as annual revenues collected from payroll tax. In other words, it can be stated that this scheme forms an autonomous part of the budget. Another part of the expenses is not standard budgetary expenses that happen to be paid out each year. In this part, financial resources will be accumulated up to the amount sufficient to provide financial aid and ensure liquidity of the member states during economic crisis. While determining the threshold up until which the resources are going to be accumulated, size of the European stabilization mechanisms has been takes as a benchmark. So the size of the accumulated stabilization funds in the Eurozone budget therefore equals to the size of the European Stability Mechanism, namely 500 billion EUR. Since the Eurozone unemployment scheme is balanced on revenues and expenditures side and therefore autonomous, this Eurozone stabilization fund will be funded by the remaining two Eurozone budget revenues, namely contributions of national budgets and tax from financial transactions. Given the ceteris paribus condition described in the methodology of this working paper, it can be computed based on 2012 data that annually these two sources of revenues are equal to 132.2 billion EUR. If the movements of revenues in individual years are omitted and figures from 2012 used, period after which the financial ceiling is reached can be calculated. The process of accumulation can be seen in the table 5.

Table 5: Accumulation of financial resources in Eurozone stabilization fund

| Year | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Annual contribution from Eurozone budget revenues in billion EUR | 132.2 | 132.2 | 132.2 | 132.2 | 132.2 |
| Resources accumulated in stabilization fund in billion EUR | 0 | 132.2 | 264.4 | 396.6 | 528.8 |

**Source: Own elaboration**

The table 5 shows that the threshold of 500 billion will be reached between year 4 and year 5 after the introduction of the Eurozone budget. Exactly it will be after 4.78 years. At that time, Eurozone stabilization mechanism will be filled up. The issue of further development of the Eurozone budget is tackled in the recommendations of the working paper where two scenarios are developed.

### 4.3.1    Unemployment benefits

Unemployment benefits are the most important Eurozone budget expenditure. They are designed in a way so that it should entirely replace the current unemployment benefits in the national level. The design is based on a study by European Commission that is described in the Literature review of this working paper. The study focuses on unemployment benefit schemes in individual states and based on the data it describes characteristics of an average European unemployment scheme. These data are also used in the quantification of the unemployment benefits in the Eurozone budget.

Firstly, the number of unemployed people is computed based on population and unemployment in individual member states. According to the study mentioned above, the net average replacement rate is 60 % of the wage and the average length of unemployment is 4 months. So the annual expenditures for unemployment benefits are calculated as follows. The number of unemployed people is multiplied by average annual wage, net replacement of 60 % and average unemployment duration of four months.[7]

From the figure 7 that shows the unemployment in Eurozone member states, it can be seen how unemployment in particular member states differs. This information is also used in recommendation of the working paper where the unemployment scheme is analyzed and the net gainers in form of unemployment support and net contributors in form of Eurozone payroll tax will be analyzed. Greece and Spain have by far the highest unemployment in Eurozone reaching values around 25 % which means that 25 % of the productive population in these two countries will be receiving unemployment support from the Eurozone budget. However, it is important to mention that from the point of view of the whole Eurozone, unemployment in smaller countries such as Greece does not have so big impact on the Eurozone economy as unemployment in big countries with high population such as Germany, Italy, France and Spain. If for example the unemployment rises by 3 % in Germany, it has much larger impact on the Eurozone economy than 10 % increase of unemployment level in Greece since the absolute number of newly unemployed people in Germany is higher since the German population is enor-

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[7] All the data, formulas and detailed calalculations can be found in the attachment of this working paper.

mous in comparison to the Greek population. When analyzing the impacts of increase in unemployment, absolute values of newly unemployed people should be taken into consideration rather than relative values in unemployment in individual member countries.

It can be also seen that the differences in unemployment among the member states are enormous. The difference between the member state with the lowest unemployment (Austria) and the one with the highest unemployment (Spain) exceeds 20 %. This is also an indicator that stabilization function is needed in Eurozone budgetary structures.
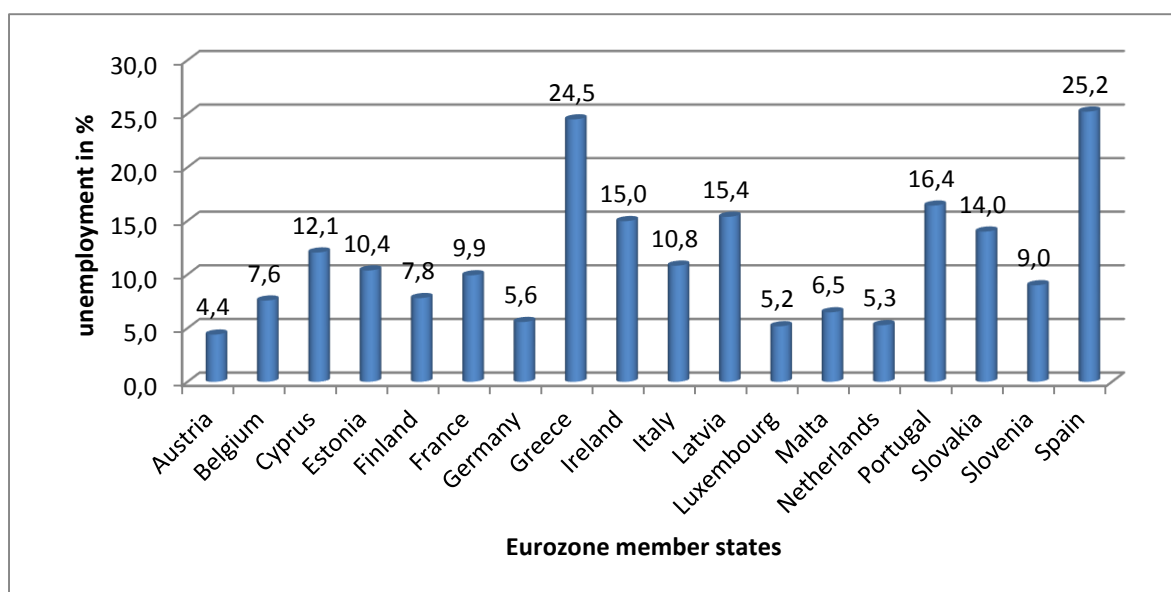


Figure 7: Unemployment in Eurozone member states based on 2012 data
**Source: own elaboration**

Figure 8 shows the distribution of unemployment benefits per member state. Similarly to the revenue distribution form the payroll tax, there are four member states that consume the majority of the unemployment benefits. These states are Spain, France, Italy and Germany and are identical to the states on the revenue part of the unemployment scheme because these countries are simply the largest in the Eurozone. These four countries consume more than 75 % of the total expenditures dedicated to unemployment benefits. However, it is important to mention that the shares of these for major contributors and receivers are different on the revenue side than on the expenditure side of the budgets and this is the key stabilization function of the budget. Again, this is described more in detail in the recommendation of this working paper.
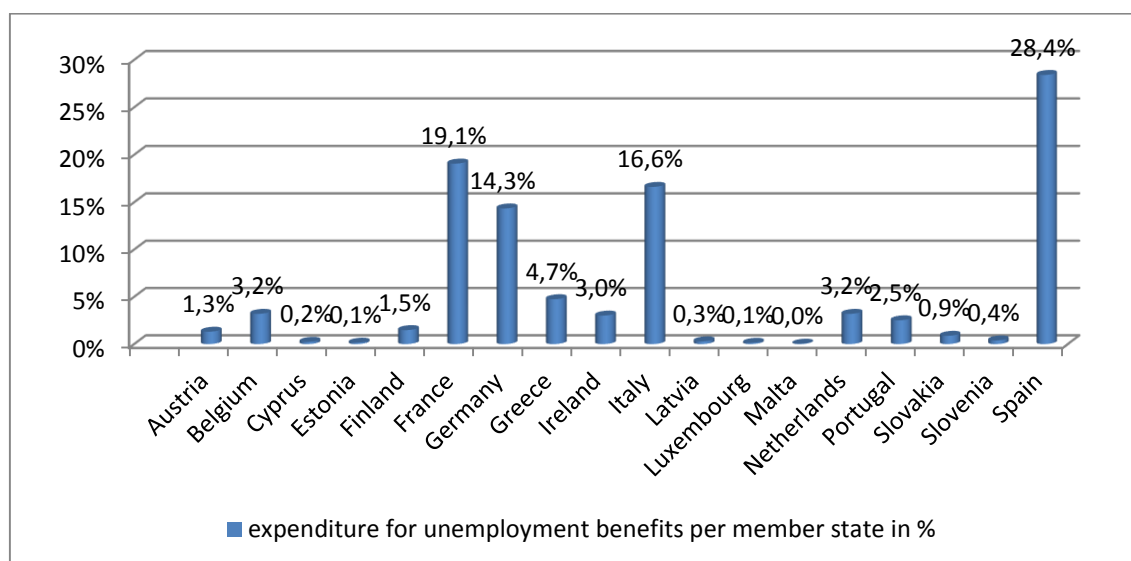
Figure 8: Share of expenditures for unemployment benefits per member state in %
**Source: own elaboration**

# 5   Recommendations

## 5.1   Eurozone payroll tax and unemployment benefits

Unemployment benefits are the most important expenditure of the Eurozone budget. One of the reasons for it is that it is an effective tool for performing a stabilization function in case when an asymmetric shock occurs within the Eurozone. In case of an asymmetric shock, some member countries experience an economic boom and on the other hand some member countries experience economic recession. Economic boom is connected with high employment and in contrast economic recession is connected with high unemployment. In case, there was no Eurozone payroll tax and no Eurozone unemployment benefits, member states experiencing economic boom would increase their revenues from payroll tax due to higher employment and decrease the expenditures needed for unemployment support due to decreased unemployment. So this member state would improve its economic situation and decrease its government debt. Exactly opposite scenario would occur in the member state that would be hit by an economic recession. The unemployment would rise meaning higher expenditures would be needed to be paid out to unemployed people and simultaneously; revenues from payroll tax would be decreased.

As a result of this the state experiencing economic boom would be better off than before and the state experiencing recession would be in economic troubles with increasing government debt. This would cause increasing discrepancies among individual Eurozone member states and increasing heterogeneity among the Eurozone member states which is of course not good since the countries use one common currency and therefore should be as homogeneous as possible to be able to pursue a unitary common monetary policy.

Common Eurozone payroll tax and common system of unemployment benefits can in fact bring stability to the Eurozone and reduce the impact of asymmetric shock within the Eurozone and thereby contribute to less heterogeneity among the individual member states of the Eurozone. This is the primary reason why this system was embedded as a mile stone of the designed Eurozone budget. If such system is introduced on the Eurozone level, following stabilization function in case of an asymmetric shock will be achieved. The country experiencing economic boom will, due to the increased employment, contribute more to the common Eurozone budget since the revenues collected from the payroll tax will be higher and simultaneously this country will need less unemployment benefits from the budget. So such a country becomes net contributor to the system of unemployment benefits. On the other hand, the country experiencing recession will be able to obtain more money in form of the unemployment benefits from the common budget without the necessity of increasing the national debt because the increase demand for the unemployment benefits in one country will be compensated by increase supply of revenues from the payroll tax in another country. This is in short the principle of stabilization function embedded in the Eurozone unemployment scheme.

The scheme is designed based on scientific articles, proposals of the European authorities, and statistical data from Eurozone member countries. It is designed to be balanced and therefore the revenues from the payroll tax computed in the revenue section of this working paper reach 155.1 billion EUR and expenditures for unemployment benefits reach 147.6 billion EUR. Small buffer of 7.5 billion EUR was created for possible deviations from statistical calculations in the real situation.

Figure 9 compares share of expenditures for unemployment benefits of member states which is denoted by blue color and share of payroll tax revenues collected by individual members of the Eurozone. Since both revenues and expenditures are almost equal and the sub-budget of the unemployment scheme is balanced, these two variables can be easily compared. Figure 17 shows that in both expenditures and revenues France, Germany, Italy and Spain are the key contributors and consumers. However it is interesting to see that role of these states are not the same. France and Italy have more or less the same share on both revenues and expenditures. On the other hand, revenues collected in Germany are approximately twice larger than benefits consumed. This is due to the fact that the unemployment in Germany is low. In contrast, Spain consumes almost three times more unemployment benefits than it collects in form of payroll tax. Again this is due to an extreme unemployment in Spain. In order to simplify the whole scenario, it can be stated that the excess of payroll tax revenues over unemployment benefits in Germany is used to cover part of unemployment benefits in Spain since Spain is due to high unemployment not able to collects as much revenues from payroll tax as it is needed. It is a practical example of the stabilization function in the Eurozone budget.
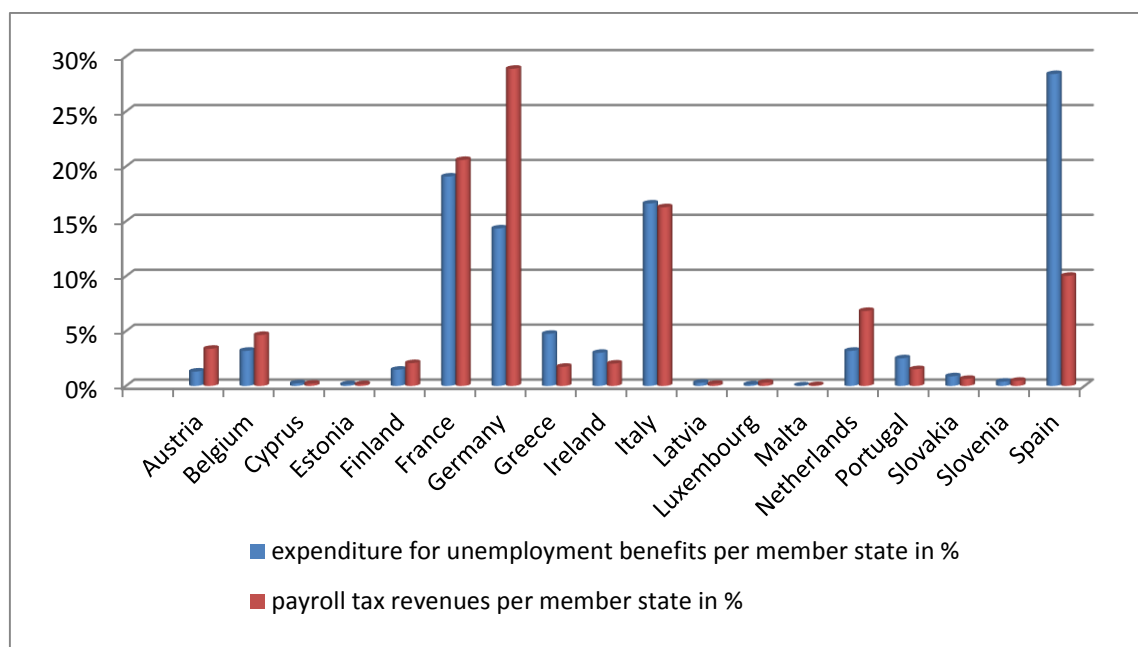


Figure 9: Comparison of payroll tax revenues and unemployment benefits expenditures per member state in %
**Source: own elaboration**

If we look at other member states except the four major players, there is a similar scenario of the Netherlands, Greece and Ireland where the excess of collected revenues from the payroll tax in the Netherlands roughly matches Greek and Irish excess of money needed to pay out unemployment benefits combined. Here it is again important to mention that increase of unemployment in countries with small population does not play so important role as an increase in most populous countries such as Germany, Italy, France and Spain where only a mild increase in unemployment represents bug amount of newly unemployed workers in absolute terms. From this point of view, Spanish unemployment represents the biggest threat for the Eurozone economy since Spain has a productive population of almost 31 million and 25 % level of unemployment which means that in Spain, there are 7.8 million unemployed which is more than the entire productive population of Greece.

Figure 10 shows the net gainers and net contributors of the Eurozone unemployment scheme in billion EUR. Negative values in the left side of the figure mean, that given member state collects more money from the payroll tax then amount of money needed for unemployment benefits. These countries can be called net contributors to the Eurozone unemployment scheme. By analogy, the positive values in the figure 18 mean that the country consumes more money for unemployment benefits than amount of money collected by the payroll tax.
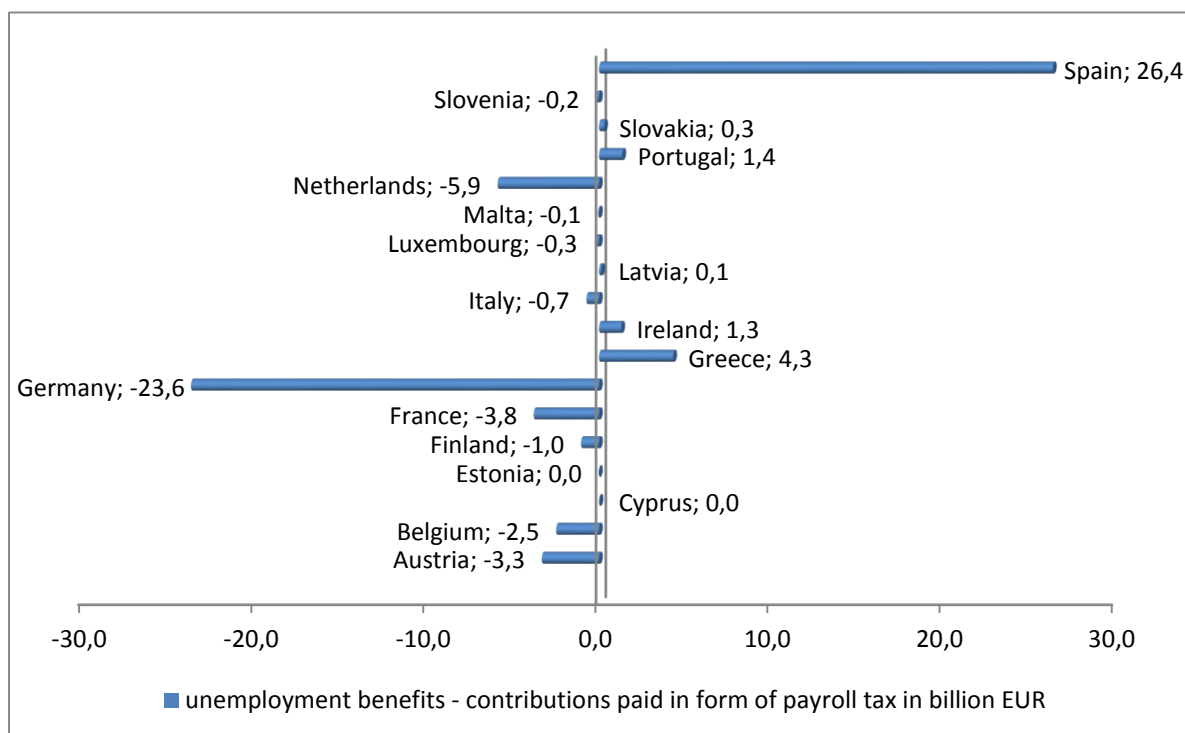


Figure 10: Difference between unemployment benefits received and payroll tax paid per member state in EUR billions
**Source: own elaboration**

It can be seen that many Eurozone countries (Slovakia, Malta, Luxembourg, Latvia, Italy etc.) do not have a substantial positive or negative balance in the unemployment

scheme. On the other hand, Germany and Spain have the most unbalanced figures, Germany being the biggest net contributor with 23.6 billion EUR and Spain being the biggest net gainer with 26.4 billion EUR.

Another important fact to be mentioned is that all countries except Italy often called PIIGS (Portugal, Ireland, Italy, Greece, and Spain) are practically the only net gainers of the unemployment scheme. This is also a proof that unemployment scheme designed in this working paper is in fact able to provide stabilization function in times of economic crisis and effectively transfer financial resources from countries not suffering so much from the crisis to countries that are really badly affected by an economic downturn and thereby help stabilize their economies and economy of the whole Eurozone.

## 5.2   Solving only temporary asymmetric shocks

Taking into consideration the position net gainers and net contributors, it is important to stress out that stabilization function of the Eurozone budget is designed to tackle only temporary asymmetric shocks. Especially for Germany being by far the biggest net contributor, it is crucial to emphasize that financial transfers have only temporary character and solve only temporary asymmetric shocks. Otherwise it would be very difficult if not impossible to accept such transfers by the voters and public in the member states that are net contributors. This would of course hinder stabilization processes in the Eurozone because without political will no changes can be enforced.

Net contributors need to be assured that for example the unemployment in Spain is not going to be permanent which would mean that Spain would become permanent net gainer from the Eurozone unemployment scheme. This can be achieved by required reforms of labor market similar to so called Hartz labor market reforms carried out in Germany from the year 2003 and onwards. These reforms included establishment of Staff Service agencies and job centers, support of further education, new types of employment, grants to entrepreneurs, and reform of unemployment and social benefits. Concrete suggestions for implementing such changes into the Spanish environment are out of the scope of this working paper but it is important to emphasize that some reforms need to be performed in member states that are net gainers in the Eurozone budget in order to ensure that transfers from net contributors will not be permanent. The question for the further research could also be how to ensure that competitiveness o the net gainers is improving and who or which institution should be responsible for the supervision of such process. Should a position of Eurozone minister of finance be created who would supervise national reforms of the member states? Or should the net contributors have a right to control reforms of net gainers? A further research to answer these questions would be needed and it would be a good complement to this working paper. (29)

Another tool how to ensure that the financial transfers from one member state to another are not permanent is to improve competitiveness in net gainers by attracting foreign direct investments and providing investments incentives. This is more in detail described in the next paragraphs where two scenarios of the Eurozone budget are described.

## 5.3   Two scenarios after filling up the stabilization fund

As it is written the part of this working paper where the expenditures of the Eurozone budget are described, there is a stabilization fund in the amount of 500 billion EUR to be filled up with contributions of the budgets of individual member states and from the revenues gained by the tax from financial transactions. It was computed that the stabilization fund is going to be filled up after approximately 4.8 years after introduction of the Eurozone budget. After filling up this fund, a question arises what is going to happen with revenues previously used for filling up this fund. In order to answer this question, two scenarios have been created and described in the following paragraphs. It is also important to mention that detailed analysis of the impact of particular scenarios is out of the scope of this working paper. The following paragraphs should be perceived as suggested recommendation or inspiration for further research.

### 5.3.1   First scenario: abolishing contributions from national budgets after reaching necessary stabilization ceiling

The first scenario supports lean budgetary structures. From this reason, the contributions from national budgets will be abolished right after filling up the Eurozone stabilization fund in order to decrease the burden of national budgets of member states. However, there still will be one source or revenue left, namely the tax from financial transactions. This tax does not play a key role in the revenue structure of the Eurozone budget. But when once already introduced and implemented, it does not make much sense to cancel such tax just after the stabilization fund is filled. Therefore, in this scenario, tax from financial transactions will be further used for improving competitiveness of net gainers and thereby preventing the financial transfers to be permanent.

Unemployment could be decreased by attracting foreign direct investments (FDI) into the countries. Attracting FDI requires providing investment incentives and giving so called tax holidays to the foreign investors. And this should be the use of the revenues from the tax from financial transactions. Revenues should be used for providing investment incentives and reimbursing the member states for uncollected tax revenues due to the provision of tax holiday to foreign investors. Annual revenues from the tax from financial transactions are computed to be 36.5 billion EUR annually. It is not a very high amount of money to improve competitiveness of net gainers but since this is a scenario of lean budget, it is at least some financial resources available for fighting against permanent financial transfers within the Eurozone budget.

### 5.3.2   Second scenario: permanent contributions from national budgets

In the second scenario, both contributions from national budgets and tax from financial transactions will be used for improving competitiveness of the net gainers and preventing permanent transfers within the Eurozone budget. The amount of available financial resources in this scenario is much higher. Annually, it amounts to 132.2 billion EUR annually. Therefore, resources could be also invested in so called "Trans-European" networks that would increase for example labor mobility so that it would be easier for people to work abroad and therefore the asymmetric shocks would be smaller.

# 6  Discussion and conclusion

## 6.1  Discussion

In the discussion part of this working paper theoretical concepts and scientific articles related to a stabilization function are confronted with and compared to the designed budget of the Eurozone. Firstly, it is necessary to say, that in accordance to the theory of fiscal federalism the stabilization function of the budget should be centralized, should include automatic stabilizers and should help overcome asymmetric shocks in individual states of the federation. The theory however supposes that firstly a federation is created and then subsequently the federal budget according to the principle "no taxation without representation". The process of creating a federation would also be a possible topic for further research.

The designed Eurozone budget is indeed centralized on the European level, namely on the level of monetary union called Eurozone. The budget includes automatic stabilizers that help the economy overcome fluctuations in output. The stabilizers are represented by the designed unemployment scheme that is autonomous on both on the side of revenues and expenditures. If there is an economic boom, revenues in terms of payroll tax are going to be increased and on the other hand in terms of recession expenditures represented by unemployment benefits are going to be increased. This helps smoothen the business cycle in the Eurozone. Last but not least, Eurozone budget also helps overcome asymmetric shocks within the Eurozone. For this purpose transfers among individual member states are introduced both in the unemployment scheme where some states have a role of net gainers and some of net contributors as well as in the concept of contributions of national budgets where principle of solidarity is applied and richer member states contribute more than poorer member states.

Various scientific articles describe the necessity of aggregate approach to budgeting in Europe. In the literature review of this working paper, there is an example comparing a degree of spending in various fields on a central level in Europe, USA, Canada and Switzerland. In all observed fields, European budgetary structures are far less centralized as in the other countries. Figure 1 shows that in Europe, spending of social welfare programs are entirely financed on local or national levels. This situation is improved in the Eurozone budget by centralizing the unemployment scheme, introducing Eurozone payroll tax and Eurozone unemployment benefits.

In this working paper, scientific articles about recent economic crisis and its influence on the EU budget have been researched and described. However, it is important to mention that budget of the European Union has never been designed to pursue a stabilization function. Moreover, since the EU budget has been approved for the next budgetary period of 2014 to 2020 and there is very little political will to pursue any changes, the author decided to apply some of these recommendations to the Eurozone budget. For the budget of the EU, it was recommended to establish some common European tax. The articles often spoke about common corporate income tax or common personal income tax. None of these two recommendations have been implemented to the Eurozone budget because there is so big heterogeneity among individual income tax

systems, tax bases, tax rates etc. in the individual member countries that establishing of common personal or corporate income tax would be extremely complicated if not impossible to quantify. Furthermore, common income tax could not be easily and duly implemented to the big diversity and also to no political will of member countries to give the responsibility of such importance to the European level. Instead of creating common personal or corporate income tax, common Eurozone payroll tax has been designed and plays the key role of the Eurozone budget.

Stabilization funds in Europe and protecting of member states from defaulting was another topic that often described in up to date scientific articles. This principle was also taken into consideration while designing the Eurozone budget. There are two sources of revenues, namely the contributions from the national budgets and tax from financial transactions that are used for creating the Eurozone stabilization fund. According to the author's opinion, it is better to include such stabilization funds directly into European budgetary structures rather than creating a fund with self identity and financing because net contributors such as Germany will never agree with issuing common Eurobonds without creating a common Ministry of Finance that would be entitled to influence national fiscal policies. While establishing the size of the Eurozone stabilization fund, currently existing European Stability mechanism was taken as a benchmark and from this benchmark a value of 500 billion EUR for the Eurozone stabilization fund was taken.

In the literature review of this working paper, one important theoretical aspect is written and emphasized. It says that it is of a great importance to ensure that in the long run, there are no net gainers and net contributors within the budget and that the transfers among the states should solve only temporary economic shocks. This crucial theoretical background is also considered in the Eurozone budget. In order to prevent transfers and asymmetric shocks from being permanent, competitiveness of the net gainers needs to be improved. After filling up the Eurozone stabilization fund, part of the revenues of the Eurozone budget will be used for improving competitiveness of the net gainers and two scenarios have been developed in the recommendations of this working paper.

European Commission has issued a proposal for the tax from the financial transactions for 11 member states of the European Union. This proposal and principle of the tax from financial transactions have been implemented into the Eurozone budget as a source of revenue and revenues recalculated for the whole Eurozone.

While establishing the size of the Eurozone budget, two benchmarks have been considered. The first one is the Report of the Study Group on the Role of Public Finance in European Integration, more commonly known as so called MacDougal report. The report was prepared for the European Commission and contains information about minimal size of the budget that should perform stabilization function, namely 2 % of the GDP. Second benchmark used for determining the size of the budget was current European stabilization mechanisms. Based on these two benchmarks the size of the Eurozone budget was determined.

Also the unemployment scheme of the Eurozone budget was confronted with the theoretical background, concretely with a study of European Commission about unemployment benefits in the EU member states. Despite the fact that the unemployment

benefits differ substantially in individual member states, averages have been used in order to design unemployment scheme of the Eurozone budget. The fact that there are big differences in unemployment benefits in member states in many aspects as it is described in chapter 3.8 might actually create problems in implementation of the Eurozone unemployment scheme because for some member states, Eurozone unemployment scheme will be too generous for the unemployed people and for some member states in will not be generous enough compared to nowadays existing national unemployment schemes. Therefore, unemployment schemes in individual member states would have to be harmonized before the implementation of the common Eurozone unemployment scheme which could be also an interesting topic for the further research.

## 6.2  Conclusion

The goal of this working paper was to design a structure of a budget of the Eurozone that would perform a stabilization function during economic and financial crisis in order to provide stabilization mechanisms to be able to address asymmetric shocks.

Since the topic of this working paper is very broad, complicated and touches many spheres of the economy, the goal of the working paper was achieved und number of limiting conditions. Firstly, this working paper is focused exclusively on the stabilization function of the budget and allocation and redistribution functions are not taken into account while designing the Eurozone budget. Secondly, this working paper is not addressing impacts of the Eurozone budgets on individual member states, their national economies, taxation systems, unemployment schemes and similar economic systems that would be influenced by the Eurozone budget because such research would be way beyond the scope of the working paper. Thirdly, a principle of ceteris paribus is applied in this working paper and the design of the Eurozone budget is based on the data from the year 2012 which is the most recent year with the available data. Changes and future development of individual variables and indicators such as unemployment rate, average wage etc. are omitted and all values are considered to be constant because calculating with possible development of individual variables in every single member state of the Eurozone would also be beyond the scope of this working paper. However, it is very important to emphasize that the actual data used in this working paper are not the most important aspect. It is the methodology and the design of individual revenues and expenditures itself that is the biggest contribution of this working paper. In the methodology, the author has exactly described steps that are taken to design the Eurozone budget and this process represents the added value. The data change and develop over the time, but the methodology and structure of the budget described in this working paper can be used over and over again with new data set and thereby the budget can be updated to the most recent economic data. Furthermore, an excel file containing all the data, mathematical formulas and figures is attached to this working paper so it would be very easy to perform further research with up-to-date data since the data would be just copied into the prepared tables and the whole budget including charts would be recalculated automatically.

In order to fulfill this goal, main principles of budgeting under the theory of fiscal federalism are described in the literature section of this working paper. Moreover,

relevant up-to-date scientific articles and monographs have been stated in the literature review in order to gather knowledge and background of the budgetary integration in Europe, its aims, problems and suggestions. All of these articles have been taken into account while designing the Eurozone budget. There are three sources of revenues of the Eurozone budget, namely contributions from national budgets, Eurozone payroll tax and tax from financial transactions. The contributions of national budgets represent one third of total budget revenues and contributions of individual member states can be seen in figure 3 of this working paper. It is also important to say that this source of revenues includes a principle of solidarity embedded in the European Treaties. The principle of solidarity is represented by a coefficient of contribution that is described in section 5.2.1 of this working paper.

The second revenue is Eurozone payroll tax and represents more than one half of the total revenues as it can be seen in figure 14 and therefore it is the most important source of revenues. The contribution of individual states is highly dependent on unemployment rate and average wage as described in section 5.2.2. The last revenue is the tax from financial transactions, contributing almost 13 % of the total revenues.

Regarding the budget expenditures, unemployment benefits play the key role and perform the key stabilization function of the Eurozone budget. Figure 10 clearly depicts net gainers and net contributors of the Eurozone budget. From the figure 10, it can be derived that Germany is by far the biggest net contributor and on the other hand Spain is by far the biggest net gainer of the budget. In simple words and with a high degree of simplification, it can be said that the budget introduces an outflow of financial resources from Germany and inflow of financial resources in Spain, as it is seen in figure 10. However, it is crucial to mention that according to the literature review, especially section 3.4, it is necessary to ensure, that financial transfers among member states are not permanent and that only temporary asymmetric shocks should be tackled. This issue was solved by using the revenues of the Eurozone budget for improving competitiveness of the net gainers by attracting foreign direct investment into these countries. Firstly, the part of the revenues is used for creating the Eurozone stabilization fund as it is written in section 5.3 and after the stabilization fund of 500 billion EUR is filled, revenues will be used for improving the competitiveness of net gainers and thereby ensuring that the financial transfers are not going to be permanent. In order to support the competitiveness of the net gainers, two scenarios have been developed in section 6.3. However it is important to say that these scenarios should be considered to be only a suggestion since their detailed elaboration is out of the scope of this working paper.

All in all it can be stated, that this working paper designs a balanced budget of the Eurozone whose primary aim is to perform the stabilization function and fighting the asymmetric shocks within the Eurozone. The recent financial and economic crisis has proven that this function is currently missing in the European budgetary structures and the design of the Eurozone budget conducted in this working paper provides a suggestion how such function could be embedded into European budgetary structures, what would be the best possible sources of revenues and expenditures in order to ensure stabilization function and what member states of the Eurozone would be the net gainers and contributors of such budgets. Furthermore, it outlines some suggestion

how to solve the issue of permanent financial transfers from net contributors to net gainers.

Further research should be primarily focused on harmonization of unemployment schemes in individual member states and more detailed elaboration of suggested Eurozone unemployment scheme and more exact quantification of revenues and expenditures of such scheme. Also a process of federalization of Eurozone should be researched more in detail because according to the theory a federation should be created before creating a common budget. Last but not least, exact process of improving the competitiveness of the net gainers of Eurozone budget should be analyzed in order to have a concrete plan how to ensure that financial transfers from net contributors to net gainers are not going to be permanent. This working paper could be also further elaborated by increasing the emphasis on stabilization function and including even more stabilizers such as potential economic growth of individual member countries that would serve as another weight for contributions so that the states severely affected by a negative economic shock would not contribute as much as under this proposal.

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