The financing of economic growth in Romania by the atraction and usage of structural founds

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Abstract. *In this study, we proposed to present the macroeconomic context in which the structural funds are absorbed and used efficient from the perspective of monetary policy transmission channels and the influences generated by the way they reacted at the main monetary and economic variables to different shocks in Romania's economy, between 2002 and 2013. The analysis is based on the impacts of using technological systems and data generalization in the macroeconomic and monetary framework. Thus, we included variables that capture the evolution of gross domestic product, inflation, interest rate, unemployment, monetary and wage index which are the determinants of the capacity to absorb the structural funds and also the outcome indicators for use of these funds. The interest rate channel has gained consistency in recent years, which facilitates enhancing the absorption of structural funds.*

JEL classification: O11, O4, E03, E1, E17

Keywords*: Structural funds, financing capacity, transmission channels of monetary policy, price stability, unemployment rate, inflation.*

INTRODUCTION

Monetary policy and its effects on the real economy have traditionally attracted attention in the specialized economic literature. It is clearly established that long-term changes in monetary policy affect the price level, more accurately the inflation rate, leading to effects on the absorption capacity and management of the Structural Funds. Therefore, economists agree that „the main long-term objective of monetary policy should be to maintain a low and stable price" (A. Abel, Bernanke B. and G. Smith, 2003, p. 256). However, in the short term, this remains a powerful tool that can affect real economic activity in the direction of structural funds absorption and enhancement, through multiple channels.

According to conventional theory and empirical evidence, in emerging countries it is presented a potential risk when using the transmission channels of monetary policy during the transition period (eg. short-term interest rate; monetary base), because of structural and institutional deficiencies in these countries - underdeveloped financial systems, high inflation rates, state involvement in the economy, dollarization / euroization of assets and liabilities. Accordingly, many studies in the literature state that the monetary policy transmission mechanism is different among the former countries with command economy. However, as the transition is a dynamic trend marked by permanent qualitative changes, the literature mentions that monetary policy and its interaction with European Unions funds which contribute to the economic growth can develop other sort of variables over time. In these conditions, new

evidences on the influence of macroeconomic factors are needed to assess as accurately as possible their impact on the real economy and the effects of the attraction of structural funds.

The monetary policy has effects at the European Union level and is generating the necessary sources of absorption of structural funds by providing co-financing and generate an efficient implementation of such projects funded. The relevance of the transmission mechanism of monetary policy from the perspective of euro adoption and increasing the absorption capacity is found in internal monetary policy effects on the economy. These effects are significant and substantialy different compared to the observed effects in the euro area, and if the economic growth of the countries is situated in different phases and it does not facilitate the equity in absorption of European Union funds, then the cost of the loss in monetary independence could be significant.

On the other hand, the application of similar measures used to facilitate the absorption and efficient use of European Union funds addressed to the economic growth of countries would lead to equity in the economic development in each member state. Thus, it is provided by the European Commission funds which are directly financed in competitions opened for all member states as well as non EU member states, as provided in the guidelines. This kind of financing allow the equity and transparency in the accessing of European Union funds and compete at increasing the economic growth of the member states, as well as for the states that will become members in the following periods. Also, each country from the European Union has benefited in the previous programing period 2007-2013 and will benefit in the present period of financing 2014-2020 of specific programs of financing. This programs of financing are created according to the problems identified in each development region, as well as being consistent with the macroeconomic development, congruent with the directives of the European Union. In addition**,** monetary policy should have the same effect on all Member States, prompting them to equally share the burden of adjustment after a monetary contraction or advantages of monetary easing.

The transition to a market economy, the recent financial crisis, and thus banking crisis, the gradual absorption of structural funds in the analysis period (2002-2013), gives us reasons to consider that the Romanian economy structure has changed. These changes in the economy also had „an impact on monetary policy transmission mechanism" (T. Cogley, TJ Sargent, 2005, p. 262–302), directly influencing absorption and enhancement of structural funds. Furthermore, changes in the monetary policy caused by the introduction of strategy to target inflation adopted in 2005 by the National Bank of Romania, which have influenced monetary policy mechanisms with positive effects for the absorption of structural funds, since 2007.

Information on monetary policy transmission mechanisms, dynamics and persistence of inflation, highlighting determinants in pricing, but also the impact of expansionary monetary shock of a set of variables are useful in providing an overview of a country's economic development to outline the macroeconomic absorption of structural funds and their long-term capitalization. These determinants can be used and analyzed in comparison with their level in other countries, thus making an assessment of the monetary heterogeneity and its impact on the structural funds in a broad economic structure (eg. European Monetary Union). In order to provide information regarding the items mentioned above, but taking into account the monetary image of Romania in the last 12 years, we propose, in this paper, to expand the area of research in this field.

Specifically, in this study, we aimed to highlight the macroeconomic correlations that influence the absorption capacity of the Structural Funds and management of funds absorbed in Romania, in terms of: gross domestic product, inflation rate, interest rate, money supply, unemployment and index wage growth in Romania, between 2002 and 2013. Our research propose a dynamic analyse of the impacts generated in the economic growth by absorption of European Union funds, throughout using technological systems and data generalization in the macroeconomic and monetary framework.

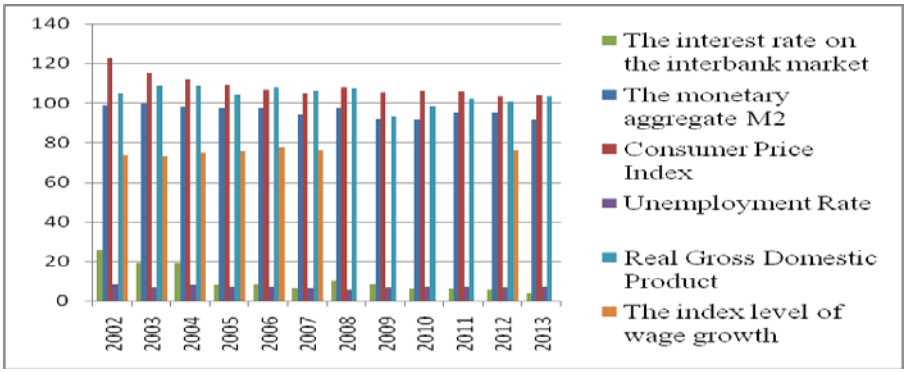
In our opinion, the contribution of this study to the literature is important, but also original from several points of view. First, from our knowledge, technological systems and data generalization has not been commonly used for the analysis of macroeconomic factors determining the absorption capacity for analysis and management capacity of structural funds in Romania. Second, the number of variables included in the analysis is quite significant and comprehensive. Third, the time covered by the analysis is quite long, including significant events that affected the Romanian economy and hence the effects on the Structural Funds.

The article has the following structure: the first section contains references to literature and a brief description of macroeconomic and monetary framework in Romania between 2002 and 2013, which affects the absorption capacity and management of Structural Funds; the second section contains a summary of the impacts of using technological systems and data generalization in the macroeconomic and monetary framework and the last section lists the conclusions of the research.

1. THE MACROECONOMIC CONTEXT IN ROMANIA DURING 2002-2013

From a macroeconomic perspective, it can be said that Romania has come, in the first decade of the XXI century (2000 - 2010), to a full economic cycle. Evolution of GDP during 2002 - 2013 has seen an upward trend, reaching in 2007 the highest value of 137 billion Euro. On the economic crisis it has decreased in 2009 to 7.1%, following a slight recovery afterwards. The period of economic growth between 2000 and 2008 was followed by a downward spiral. Even the period of economic growth can be divided into two terminals being represented by 2004. In the first part of the decade exports led to a moderate growth, but sustainable. This accumulation period was followed by one in which consumption has paved a positive output gap. Consumption was largely covered by imports; domestic supply not being large enough to meet the demand. Registered unemployment decreased steadily from year to year during 2002 - 2007. In the following period, marked by the strong global financial crisis events, effects were felt in rising unemployment in 2008, followed by a doubling of its value in 2009. Later, between the years 2010-2012 it was characterized by a downward trend of unemployment, reaching 5.59% in December 2012, and the value similar to that of December 2005. From an evolutionary standpoint, the main statistical data underlying the research is presented in the chart no. 1, given below:

Chart no. 1 - Evolution of the main macroeconomic indicators during 2002-2013 in Romania



Source: elaborated by the authors, according to data from the web-site http://www.imf.org, accessed 12 decembrie 2014.

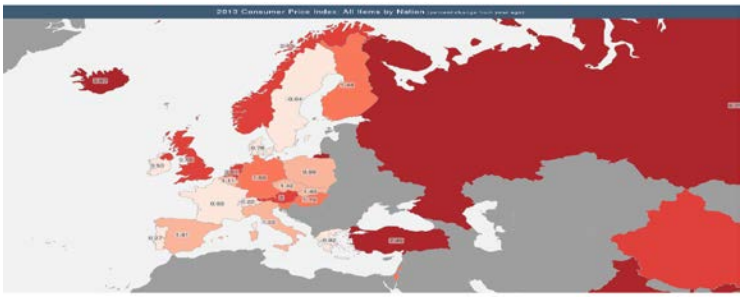
Evolution of the main macroeconomic indicators by countries

The inflation is one of the fenomens that concern directly the population and include the attention more striking from the central banks. Inflation targeting is a measure mainly used by the European union countries, which followed consistently the reducing of inflation, in order to complete the convergence criteria imposed by the European Union and Monetary Union. The National Bank of Romania applied the strategy of directly targeting the inflation, surnamed contractual approach, starting with march 2005. Accordingly to the analysis of GEO FRED, in 2013 inflation was below target European Central Bank target of 2% for most euro area. The following chart presents the success of the last years by maintaining inflation below target. These effects started to be significant in Romanian economy starting with 2005 and become visible in the last years, with a pronounced effect in 2013. Through the target of inflation, at the European level, the Central banks contributed to creating strategic policies, by controlling the monetary aggregates, using the exchange rate as anti-inflationary anchor, as well as using the structural and macroeconomic models in order to intervene in the money supply in circulation so as to orientate the monetary policy.

The following graphic presents the situation of the indicator consumar price index in 2013, at Eupean Union level. This graphic represents that the targeting of inflation means the capacity of the Central banks to forecast the economic evolution for the next fouth quarters and their ability to adopt mesures of prevention the predictable deviations from the target. This situation is not concerning, due to the fact that the Ceral banks have flexibility in applying the mesures for targeting the inflation and thus become the basis for sustainable economic growth and increasing the capacity of efficient use of European Union founds. The measures of intervention in the monetary policy used by the Central banks leds to fulfillment of the convergence criterion imposed at European Union level and contribute to the implementation of projects financed from the European Union funds that can become parts components in generating.

For 2014 presented similar situation and do not have any improvement. In the above map that was created in GeoFRED, is depicted from year to year inflation for the European Union.

Chart no. 2 – Consumer price index in 2013, by nations



Source: GEO FRED, geographical economic data, accessed 4 march 2014.

For Romania the most important contribution to GDP growth in the first nine months of the year 2014 compared with the same period in 2013, they had these branches, according to National Institute of Statistics:

- Industry (+ 1.3%), accounting for 30.3% of GDP and whose workload has increased by 4.2%;
- Information and communications (+ 0.7%), accounting for 5.2% of GDP and whose workload has increased by 15.3%.
- A positive contribution had a net taxes on products (+ 0.3%), whose share in
- GDP was 12.0% and that their volume grew by 2.6%.

Reducing the volume of construction activity, 3.1% had a negative impact on GDP growth, contribution to GDP growth was -0.2%.

Financial and insurance were, and they, a negative contribution to GDP growth (-0.1%) due to lower volume of activity by 2.8%.

Gross domestic product in 2014 was, in real terms, up 2.9% compared with 2013.

- Gross domestic product in the fourth quarter 2014 was, in real terms, up 0.5% compared with the third quarter of 2014;
- Compared to the same quarter of 2013, GDP grew by 2.6% on the gross series and by 2.5% in seasonally adjusted;
- Revision of gross series by including additional information for 2014, determined seasonally adjusted series recalculation, volume indices is revised from version "signal" gross domestic product for the fourth quarter 2014, published in the press release no. 42 of 13 February 2015.

Chart no. 3 2011 Gross Domestic Product by Nation

Source: GEO FRED, geographical economic data accessed 14 march 2014.

Gross domestic product (GDP) in the third quarter of 2014 was, in real terms, up 1.8% compared with the second quarter of this year, the advance was slightly lower than the 1.9% estimated initial.

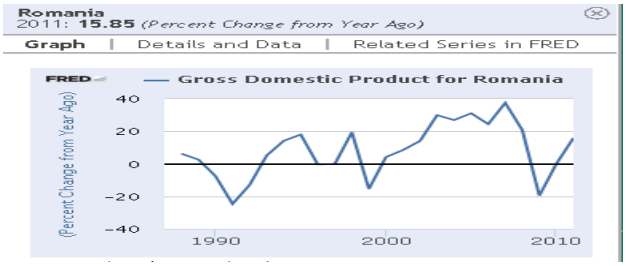
Compared with the same quarter of 2013, GDP grew by 3.2%.

In the first nine months of 2014 GDP increased compared with the same period of 2013, by 2.8%, according to the National Institute of Statistics.

After reviewing the unadjusted series under the European System of Accounts (ESA) 2010 and the series seasonally adjusted GDP declined in the second quarter of 2014 by 0.4% compared to the first quarter of 2014 (previous estimate shows that the decrease is 0, 3% - n.red.) and increased in the first quarter of 2014 by 0.7% compared to the fourth quarter of 2013 (previous estimate was 0.5% - n.red.).

Estimated GDP for the third quarter was 167.07 billion lei based on current prices and at 9 months it is estimated at 496.298 billion lei current prices.

Chart no. 4 2011 Gross Domestic Product for Romania- percent change from year ago



Source: GEO FRED, geographical economic data, accessed 14 march 2014.

Also, the main macroeconomic characteristics affecting absorption capacity and management of structural funds during the period 2002-2013 were presented by several challenges:

- inflation has followed an obvious downward trend, Romanian National Bank adopted inflation targeting strategy in the year 2005, this decision is consistent with the monetary policy and other emerging countries (Poland, Hungary, Czech Republic); However, despite „demand deficit, inflation remains relatively high in emerging economies, its level in Romania is one of the highest in the European Union „ (Isărescu M., 2013);
- monetary policy rate followed a downward trend, reaching for the first time the level of one number in April 2005, then due to the financial crisis, it has been registered an increasing, and starting with February 2009 was followed by a slight relaxation;
- major fluctuations of the national currency (the euro depreciated against the national currency at a rate of 4.1 lei / euro in September 2004 to a value of 3.1 lei / euro in July 2007); then followed an appreciation of the euro to 4.2 lei / euro in January 2009, worth around which the exchange rate has stabilized; in relation leu-euro currency was compared to the other regional currencies (zloty, Czech and Slovak koruna, Hungarian currency), the longest and strongest appreciation in 2007 and as a result, depreciation was a strong one;
- current account deficit reached a value of 13-14% of GDP in 2008; if in 2005-2006 the current account deficit was financed by direct foreign investment by up to 80%, in the next years financing external deficits has become increasingly precarious, i.e. below 30% of the current account deficit was financed by direct foreign investment, the rest being indebtedness, especially in the private sector;
- since 2005, non-government credit has experienced spectacular growth rates, its value increased 5-fold in just four years; a significant proportion of non-government credit was the consumer credit which led to an increase in the current account deficit, because most goods were imported due to consumer demand; The basis of these loans

not being represented by domestic savings, but rather external framing, banks became dependent on external financing;

➢ Since 2009, the government credit has experienced moderate growth rate, external financying dependence of banks having negative repercussions on the lending process; also the high level of non-performing loans, one of the highest in Europe, meant significant costs for banks.

European Bank for Reconstruction and Development (EBRD) published forecast of evolution of the economies for Eastern and Central European countries and comparative statistics of macroeconomic and financial indicators in these countries.

Romania is the last one in a series of indicators such as bad loans, although we have the lowest unemployment rate in the region. Stam well, however, the high foreign exchange reserves and the country's external debt to GDP, lower than other countries in the region.

Regarding the forecast on the evolution of the economy in the coming years, the EBRD estimates that Romania's GDP will grow by 2.6% this year and 2.8% in 2015 to 3.5% in 2013, unchanged from the previous estimate forecast despite the fact that in the meantime statistics reveal that we are in a recession.

Chart no. 5 – Latest Non-performing loan (NPL) ratio, percent

Source: Regional Economic Prospects in EBRD Countries of Operations: September 2014.

Compared with neighboring countries of our size, we are of this view slacker: Poland would have an economic growth of 3% this year and 3.3% in 2015, while Hungary 2.8% in 2014 and 2.2% in 2015.

Exceeding the Bulgaria, with an estimated GDP growth of just 1.5% this year and 2% next year.

In terms of non-performing loans are the champions, as we know: we arrived early at a rate of over 22% (even if in the meantime we dropped following the measures taken by the central bank) in the countries such as Serbia, Albania , Mungenegru, Cyprus, much higher than in Poland (8.3%) and Hungary (7.8%).

And this despite the turn, prevents Romania has the lowest unemployment rate in the area, only 7% compared to 9% in Poland and 8.1% in Hungary, not to mention Bugaria 13%.

Do not sit too well nor about the saving rate: bank deposits represent only 34% of GDP by $ 189 billion, the second largest in Eastern Europe after Poland, with 516 billion. Compared deposits in Bulgaria account for 68% of GDP, 39% in Hungary and in Poland 47%.

Romania's foreign exchange reserves managed by BNRse amounted to $ 41.8 billion, representing 22% of GDP and can cover the value of imports over a period of

6.2 months. In comparison, Poland's valuation reserves are $ 98 billion, representing 19% of GDP and imports cover the country over a period of 5.2 months.

A positive aspect is Romania's external debt, which represents 69.7% of GDP, lower than in Bulgaria, with 95.9% and Poland with 71.1% and Hungary, with 115.9%.

As can be seen, countries that have recorded the highest economic growth also recorded the largest increase technological system software.

According to data collected from the website of the European Commission Trand economic growth in the EU countries is parallel to that of technology and software development.

Given that the EU software is an important factor of economic growth at the macroeconomic level, it was decided to encourage research and innovation in IT

Innovation has been placed at the center of EU strategy for growth and jobs.

Member States are encouraged to invest 3% of GDP in research and development in 2020 (1% of public funds, 2% of private investment), which is estimated to generate 3.7 million jobs and would result in a annual increase EU GDP by around 800 billion euros.

Initiative Innovation Union directs the efforts of Europe (and cooperation with non-EU countries) to address major current challenges: energy, food security, climate change, population aging. The public sector will be used to stimulate the private sector and removing bottlenecks which prevent ideas reach the market, including lack of capital, fragmented research systems and markets, insufficient use of public procurement for innovation and slow adoption of standards.

The EU is working to create a single European Research Area that enables researchers to work in any EU country and inside which is supported and encouraged the CBC.

In January 2014, the EU launched a new research program provided for a period of 7 years, Horizon 2020. An amount of 80 billion euros will be available by 2020, along with public and private investment that this European funding will attract. Horizon 2020 brings together all funding for research and innovation in one integrated program.

2. SOFTWARE DEVELOPED FOR MACROECOMIC AND FINANCIAL SYSTEM - SUNGURAD

In a recent analysis, Meridien Research has estimated that in 2004 only risk applications management worth USD 4.1 billion internationally. An important factor in this increase is the requirements of regulators of the capital market for each country. Basically, with this kind of applications can not imagine a brokerage firm or a commercial bank.

Given that the Internet is used all over the trade, the merger of current practices in risk management and applications "world wide web" is inevitable. Now there are plenty of sites involved in the financial management of risk, but using only two models of communication with end users: either it comes to education and public information, either on a subscription basis, it may gain access to different databases. In addition, there are few sites that provide tools and applications in financial risk management and further analysis. Given the recent development of the Internet, it is used in a small measure of risk in financial management. It can be said that these are the years of childhood.

For the near future, it is expected that Internet-based solutions is first used by small institutions than for large financial institutions. This is primarily because the Internet is not considered to be safe enough.

Currently, web-based solution providers offering a wide range of products. Some vendors such as SunGard provides a set of integrated programs that cover all activities of the financial institution, while others provide software modules for specific issues. For example, KMV Corporation provides software packages in credit risk. There are vendors which sell only databases.

Finally, software packages that offer Internet-based solutions are more or less accepted by financial institutions. End users can be divided into the following categories: large and medium finanaciare institutions, financial institutions, small and medium traders and investors online. Erste Bank Group has selected solution System Access Symbols global leader of IT services for the financial, SunGard, for core banking operations, SunGard announced a release over the Singapore Business Wire.

Implementation System Access Symbols Slovenska sportilena already started on 2 June 2006 and the experience gained there will be a model for the entire network Erste in Central and Southeastern Europe.

Previously partnership with Erste Bank, SunGard acquired Singapore based company, specializing in financial solutions, System Access, a move that has improved Symbols platform area of expertise.

In a blog post "beyondbrics" reputation of British publication Financial Times, Philippe Carré, Head of Capital Markets SunGard company says that the best strategy for scholarships in South-East Romania, Bulgaria and Croatia is to follow the example of Austria to form a regional alliance. Vienna Stock Exchange bought the largest exchanges in Central and Eastern Europe (Prague, Budapest and Ljubljana) and created the group CEESEG stock with capitalization similar to that of the Warsaw Stock Exchange, which has grown through acquisitions but through privatization.

Erste Bank operates successfully in the most dynamic economies in Europe, targeting 15.2 million customers a prosperous region. In December 2005, after a series of other acquisitions successful Austrian banking group acquired the Romanian Commercial Bank.

Complimenting an annual revenue of $ 4 billion, SunGard is a global leader in software development for banking, education system and public sector. US IT services giant close business sector clients worldwide.

Also SunGard has offered to take the System Access Limited, a leading global provider of banking software solutions for financial institutions.

Buyer has received permission to take over approximately 99.54% of the shares of System Access. This will expand its portfolio in the banking space. Transaction is not expected to affect the financial results of SunGard.

System Access Suite provides universal banking solutions for back-office processing, delivering front-office multichannel management and payment cards.

At European level Sun Guard entered the most developed countries of the European Union.

3. CONCLUSIONS

In this study, we aimed to provide new empirical results regarding the impact generated by the Structural Funds, in terms of the absorption and implementation through macroeconomic factors in Romania using modern techniques. In this way, we

wanted to capture how main monetary and economic variables react to different shocks in the context of structural funds. In the analysis, we included variables that capture the evolution of gross domestic product, inflation, interest rates, unemployment, monetary and wage index.

Important conclusions can be drawn from the analysis. First, it is worth noting the robustness of monetary policy transmission channel represented by the interest rate, which generates positive effects on the absorption of structural funds and their use. All variables included in the analysis, according to theoretical records respond to an increase in interest rates seen in the facilitation of structural funds in Romania. Thus, in the absence of "output puzzle" (increased production due to a positive output rate) and the "price puzzle" (increased inflation due to an expansionary monetary policy), the interest rate channel has gained consistency in recent years and will provide a solid potential for exploitation of structural funds. Secondly, the relationship between inflation and unemployment is consistent, in Romania, the Phillips curve and offers linearity in the use of structural funds.

Certainly, in this study there are new research directions. One of these is the comparison of results with those of other European Monetary Union countries to test the correlation hypothesis of business cycles and similarity between effects on the economic factor interconnections on the absorption and use of Structural Funds.

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