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Inflation in Romania within the context of the European integration

- *summary of PhD thesis –*

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RECTOR'S OFFICE

Mrs/Mr……..

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We send the summary of PhD thesis and inivite you to participate at the meeting of the thesis defence.

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Introduction

On 1st January 2007 Romania became a member state of the European Union (EU), being obliged to adopt the euro currency in the moment of the fulfilment of the nominal and real convergence criteria and to participate in the Exchange Rate Mechanism II (ERM II) for at least two years.

Thus, in the candidate countries to the European Union, an important task is to reduce the inflation rate, and, at the same time, to increase the gross domestic product per capita at the level of the European average. Most of the European Union accession countries have made significant progress towards macroeconomic stability, particularly, took place the substantial decline of inflation rate, price stability being one of the EU accession criteria.

The EU member states, including Romania, have not yet joined to the euro area, have committed to adopt the euro currency and to make efforts for fulfilment of the sustainable Maastricht convergence criteria.

Maastricht monetary criterions (inflation, exchange rate and long-term interest rate) represent the main concern of the central banks of the countries which are on the road to the euro. But the main challenge which the monetary authorities of the countries which apply a flexible exchange rate will face is the simultaneous assurance of the price stability and exchange rate stability in the period of the participation in Exchange Rate Mechanism II. Thus, an essential role in the fulfilment of the convergence process will fall on the monetary policy of the candidate countries.

The aim of this research is to estimate the inflationary impact of the European integration process in Romania and to identify of possible scenarios after the accession to the euro area.

The objectives subordinate to the scientific approach are:

- identification of the causes of the inflationary process;
- estimation of the effects of the accession to the European Union upon inflation rate;
- assessment of the challenges for National Bank of Romania's monetary policy;
- quantification of the inflationary impact of the introduction of the euro;
- analysis of the implications of accession to the euro area.

The thesis is structured in five chapters, to which we added the introduction, conclusions, bibliography and appendices.

The nature of the research theme impose both a qualitative and a quantitative approach. In this sense, we used **basic research** for the understanding of the concept and of the nature of the inflation, of the causes and its effects upon the economy, and the role of the central bank in ensuring price stability.

Processing and interpretation of statistical data of the EU Member States we appealed to both of qualitative and quantitative analysis. From **the qualitative methods**, we used the *comparison method* for assessing inflationary effects of the adoption of EU specific policies and mechanisms in countries that joined in 2004. Also, the method was used to

analyze monetary strategies applied by new member states of Economic and Monetary Union (EMU) in Central and Eastern Europe and to examine the structure of the financial system in Romania and the euro area. For the analysis of the causes of inflation and the analyzis of monetary transmission mechanism, we resorted to **econometric modelling**, namely the use of the *vector autoregression methodology*. Also, to analyze the relationship between inflation and other macroeconomic indicators, we used *multifactorial regression models, the Granger causality tests, cointegration technique.* To highlight the divergent inflation rates in the European Union and the euro area, we used the *standard deviation.* At the end of the thesis an important role has made *the deduction* in order to identify possible scenarios on the inflation rate and the consequences of inflation differential vis-à-vis the euro area after entry in Economic and Monetary Union.

*The main contributions of this paper in the literatur*e are:

- ✓ investigating the causes of inflation in Romania between 1992-1992 and 2000-2006, using vector autoregression methodology;
- ✓ empirical assessment of monetary policy strategies in Romania in the context of euro adoption;
- ✓ examining the effects of financial crisis upon inflation rate in Romania;
- ✓ quantifying inflationary impact of Romania's accession to European Union;
- ✓ construction of two scenarios concerning of the effect of the euro introduction upon inflation in Romania;
- ✓ analyzing the implications of Romania's accession to the euro area.

Our research was focused on examining the inflationary process in Romania on periods (transition to market economy period, the EU pre-accession period, *ex post* accession period, participation in Exchange Rate Mechanism II period and *ex post* euro period) and on analyzis of the role of monetary policy in achieving price stability criterion.

CHAPTER I
The inflationary phenomenon and the role of monetary policy in ensuring of price stability

The wide range of definitions given to inflation shows both the causes of its generation and its consequences on individuals and the economy.

*In our opinion, the **inflation** represents either a monetary-real imbalance reflected in increasing volume of currency in economy without coverage in goods and services, or a real imbalance reflected in the demand growth or supply reduction, resulting in increasing prices (market economy) or to the scarcity of product (centralised economy).*

The main manifestation of the inflationary phenomenon consist in the *imbalance between aggregate supply and demand*, with the higher level the gap between demand and supply is higher.

It should be noted that the imbalance between aggregate supply and demand creates inflationary pressures when the aggregate demand increases or the aggregate supply

decreases. In the reverse situation, i.e. in the case of demand reduction or supply increase, it appear deflationary pressures.

We approved to the opinion expressed by Helmut Frisch that *the main causes* generating inflation are *the demand excess and the increasing of production costs*. We express the opinion *that other forms of inflation lead eventually to demand pull inflation or cost push inflation, they representing the causes of imbalances on goods and services market and the increasing of costs.*

Because inflation, as a macroeconomic phenomenon, has negative effects on both the economy, and the population and economic agents, the Government aims the reducing of inflation with fiscal and monetary policies. Within the economic policy, a priority place occupy the monetary policy.

Considering the primary objective of monetary policy pursued by most central banks, *we define* ***monetary policy*** *as being the set of measures taken by the central bank on monetary variables in order to ensure price stability, without to prejudice the fulfilment of the other macroeconomic objectives*.

The choice of monetary policy strategy depends on the specific characteristics of each economy, but the *success of a monetary strategy depends by the credibility of the central bank.* If the monetary authority is not credible, the economic agents and population will be anticipate a higher inflation, which will make the pressure on wages.

We consider that, *in the context of accession to the euro area, monetary policy strategy* should be based on *more flexible exchange rates*, taking into account the conflict between price stability and exchange rate criterion, especially in underdeveloped countries. Because the *strategy of monetary targeting* implies a high interest rate volatility, we express the opinion that it *cannot be used by the candidate countries*. The explanation is given by the fact that these countries pursued the reducing of the interest rate differential vis-à-vis the euro area. Regarding the *strategy of inflation targeting*, in pre-EMU period it is necessary the using a *flexible forms of it*, implying the introduction in loss function of central bank, and the output gap, taking into account the need of economic cohesion between the candidate countries and the euro area.

Implementation of the monetary policy strategy is trough monetary policy instruments. Despite the advantages of the direct instruments, in the candidate countries to the euro area it uses indirect instruments, namely open market operations, standing facilities and reserve requirements. Although it does not affect the level of interest rates, reserve requirements cannot be used alone due to of its inconveniences. In our opinion, *to achieve the convergence criteria it is necessary a combination of the three monetary policy instruments* aforementioned, using primarily *the reserve requirements* in the case of a *demand shock* and *open market policy* in the case of a *supply shock* in order to the anchorage of inflationary expectations at a low level (by increasing the interest rate). Also, we consider essential *establishing a narrow corridor of interest rates on the standing facilities*, in order not to generate a high interest rate volatility in the interbank market.

CHAPTER II
Effects of European integration upon inflationary phenomenon in Central and South-East Europe countries

The European Union accession has brought both benefits and costs for the Member States, but there is a widespread consensus among the authors that the benefits of the accession will exceed the costs, especially in the long run (Tang, 2000, p.1).

The main factors which had affected the consumer prices level after the accession to the European Union are: the harmonisation of the structure and rates of indirect taxes; the adoption of the Common Agricultural Policy (CAP); the introduction of the Common Customs Policy.

1.The *impact of adopting CAP* upon food prices and, implicitly, upon *consumer prices* in the accessing countries in 2004 *was insignificant*, this being counterbalanced in some countries by the national currency appreciation and by eliminating customs duties on import from the EU.

2.The necessity of *excises alignment* on the level of the those from the EU has determined a significant rising of excisable goods and services, influencing the prices of alcoholic beverages, tobacco; housing, water, electricity, gas and other fuels and transport.

3. Another factor that has exerted influence on consumer prices was a *Common Customs Policy*, but its impact has been positive. The elimination of customs duties on the import of goods from the European Union has counterbalanced the negative impact of those two factors mentioned above.

The inflationary effects of the accession process in the Central and South-East Europe countries have been on a short-run, but the catching up vis-à-vis the European average, in order to adopt the euro, affects on a long-run.

Although there are not any formal criteria for the real convergence, in the Maastricht Treaty it is mentioned the necessity for social and economic cohesion to reduce the differences among economic development of member states. The necessity of an economical cohesion is explained by the major differences of *the GDP/capita* between the analyzed countries and the European average.

Due to the catching–up process, the countries whose economies are less developed are faced with a higher inflation rate, because the price level of those countries is lower than the EU average and, consequently, the inflation rate from the European Union countries does not converge to a common level. Numerous research have analyzed the convergence of the inflation rate in the euro area and the causes of differential among them. Inflation differential between EU states are generated by five factors: the price level convergence, the manifestation of the Balassa-Samuelson effect, the exchange rate, the oil price shocks, the different weight of goods and services in the consumer basket.

The achievement of the nominal and real convergence in the candidate countries to the euro zone represents a difficult task of the macroeconomic policy mix, the nominal and real convergence being two processes that influence themselves reciprocally.

Analyzing the conduct of monetary policy and its impact upon inflation rate and exchange rate in two new EMU Member States (Slovakia and Slovenia) in the period prior the participation in the Exchange Rate Mechanism II and during participation in the Exchange Rate Mechanism II, we found that the monetary authorities have acted differently.

Monetary policy applies by Slovenia was directed towards the reduction of the inflation rate during the pre-ERM II period and to the stability of exchange rates in the ERM II period, while Slovakia has promoted a monetary policy oriented towards achieving both convergence criteria both during pre-ERM II, and ERM II period.

The experience of the two countries analyzed suggests the need one the macroeconomic policy mix to achieve sustainable monetary convergence criteria: fulfilling the stability prices criterion is the result of monetary and fiscal policy operations and exchange rate stability criterion is achieved both through the foreign exchange market interventions (policy exchange rate), and by the reduction of the interest rate (monetary policy). Consequently, *monetary policy strategy should aim both the inflation rate, and the exchange rate in both periods (pre-ERM II and ERM II).*

Whereas the countries examined have not registered an excessive budgetary deficit, the main challenge which the monetary policy of central banks faced is the assurance of the price stability and exchange rate stability. But the effects of the international financial crisis and the provisions of the new fiscal treaty brings new challenges for the monetary policy in the candidate countries to the euro area.

In the literature are numerous studies concerning the costs and benefits of adopting the euro. One of these costs is *the loss of monetary policy autonomy*. The impact of the loss of autonomy depends on monetary policy shocks which affect the whole economy of the euro area. If these shocks are similar and correlated, the monetary policy of European Central Bank (ECB) is able to dampen their influence on the economy. Otherwise, when the shocks are asymmetric and independent, the costs of the adoption of the single currency are very high, because every economy needs a different response of monetary policy.

The negative effects of the adoption of the euro, caused by the loss of monetary policy autonomy in Slovenia and Slovakia have felt upon the change of the inflation rate, due to the unfulfilment sustainable convergence criteria, the magnitude of these being different in the two countries analyzed.

CHAPTER III
The analyzis of the inflationary process in Romania in European Union pre-accession period

In Romania, the movement from centralized state economy to market economy has happened in the same time with the inflationary phenomenon of 1990-1999.The strong manifestation of inflation was determined by the artificial stopping of inflation before 1989 (Turliuc et. al., 2011, p.322). The inflation from this period was very high and volatile, being a factor of instability of the Romanian economy.

A essential feature of the transition period is the *price liberalization*, being the *main factor* with inflationary impact in this period. Inflation became a problem in November 1990 when the government resolution 1109/1990 became valid regarding price deregulation and social protection measures.

The wage increases which overcome the increase in labour productivity had been *the second factor* which had influenced inflation rate during the transition to market economy period. The highest wage increase took place at the end of 1993, when the average gross wages tripled by the same time compared to last year, in the analyzed period rising by 158 times, while labour productivity had been on average 4.87%.

The third factor that accelerated inflation in Romania after 1990 was significant *depreciation of the leu* against the US dollar, the average rate of increase of the exchange rate of the American currency being 69%, the highest depreciation of leu being in 1991 and 1992 when the average exchange rate of the leu against the dollar has risen annually by 255% and 303%.

Econometric results show that, in Romania, the main factors that have caused inflation in the period of the transition has been *the inflation persistence and significant wage increase (as cost factor)*, exchange rate fluctuations exerting a lesser influence, due to the relatively small weight of goods imported in GDP.

Although consumer prices have increased over the period 2000-2006, our country have a powerful disinflationary phenomenon since 1999, the annual rate of inflation reducing from 40.7% in 2000 to 4.87% in 2006.

If during the period of transition to a market economy the gross wages have explained the significant proportion the variation of inflation rate, in the EU pre-accession period *gross wage dynamics* had an insignificant impact on the inflation rate.

Inertial and imported inflation were the main causes of the increase in prices for the period 2000-2006. Increase the influence of imported inflation is explained on account of substantial increase of imported goods, which are on average 37% of GDP in the analyzed period, the increase was due to massive capital inflows as a result of steps of the capital account liberalization.

Large capital inflow have spurred the lending and, implicitly, have determined increasing of money supply. But whereas the monetary expansion has been accompanied by the increasing production, *the inflationary impact of capital inflows was low*. The monetary policy has to play an important role in minimizing the impact of capital inflows upon consumer prices.

The success of the disinflationary process was the result of a restrictive monetary policy, monetary policy strategy being one the eclectic strategy, that is a interweaving between monetary targeting and exchange rate targeting.

In order to achieve a sustainable disinflation from the perspective of accession to the European Union, National Bank of Romania (NBR) has adopted in 2005 the direct inflation targeting strategy.

The effect of the change in the interest rate on consumer prices is transmitted via the exchange rates. On the other hand, the National Bank of Romania's ability to control the money supply is limited, the role of inflation targeting being to anchor the inflationary expectations to a level as low as.

The direct inflation targeting and the managed floating exchange rate have contributed to a reduction of the inflation rate, supporting the process of nominal convergence in order to the integration of Romania in EMU.

CHAPTER IV
The implications of European Union accession upon inflation rate in Romania

Romania's accession to the European Union had generated a series of costs and benefits upon economy, in special upon inflation rate. The consumer prices variation was caused by the adoption of the EU acquis and the policies and mechanisms specific to the European Union.

The effect of accession to the European Union on the inflation rate in Romania has been both positive (the application of Common Customs Policy, integration into a common market, inflationary expectations), and negative (the adoption of Common Agricultural Policy, the harmonization of tax legislation). However, whereas the influence of prices of agricultural products was very small, most of the goods with the highest share in the consumer basket was imported from the EU and the expected inflation is the main component of overall inflation, *inflationary impact of the Romania's accession to the European Union was positive, on the short-term.* Because the excisable goods and services have a significant weight in the consumer basket of Romanians (who had influenced negatively the inflation rate), *the reduction of the inflation rate, as a result of accession, was very small.* We consider that the impact of accession upon the inflation rate depends, in particular, the structure of the consumer basket.

By signing the Maastricht Treaty, Romania is obliged to adopt the euro currency, but it is conditioned by the fulfilment of the convergence criteria. The degree of fulfilment of the convergence criteria represents the stage of preparation of the country to EMU. Although the Maastricht Treaty does not explicitly stipulates the existence of the real convergence criteria, they are of particular importance for the candidate countries, their unfulfilment in the moment of the euro adoption will bring more costs than benefits.

The main real convergence criterion are (Isărescu, 2004, p. 6):

1 the degree of openness of the economy;

2 share of bilateral trade with the EU member countries in the total foreign trade;

3 structure of the economy;

4 GDP/capita level, both in nominal terms, and in purchasing power parity.

From the four convergence criteria, we consider that the increase in real GDP/capita exercise the greatest influence on the inflation rate, but the impact depends on

the rhythm of its growth. In simultaneous achieving of these two convergence criteria (GDP/capita and price stability), the monetary policy of National Bank of Romania has to play an important role which, in our opinion, is to ensure a gradual increase in GDP/capita so as not to generate inflationary pressure.

To analyse the problems of monetary policy in the period prior the participation in the Exchange Rate Mechanism II, we empirically evaluated three monetary policy strategy: monetary targeting, exchange rate targeting and direct inflation targeting.

Empirical analysis suggests that, on the one hand, the money demand is unstable, and on the other hand, the ability to control monetary aggregate is low, meaning the ineffectiveness *of monetary targeting strategy*.

On the other hand, implementation of the monetary targeting in the context of the accession to the Economic and Monetary Union is limited by the capital flows liberalization. For example, the diminishment of the interest rate on the interbank market, imposed by the need to reduce the interest rate differential vis-à-vis the euro area increase money supply by multiplying the credit.

In the case of *exchange rate targeting*, the first limit is the uncorrelation the economic and trade structure with the euro area. Romania has a different economic structure from the one of the euro area and, therefore, there is the risk of appearance of asymmetric shocks. Consequently, it is necessary an independent monetary policy to react to specific Romanian shocks. A second limit is represented by manifestation of the Balassa-Samuelson effect, which leads to inflation differential in the context of fixing exchange rate.

The inflation targeting is a viable alternative to achieve the Maastricht inflation criterion and the ensuring the financial stability. Therefore, the National Bank of Romania intends to maintain it at least until the entry into the Exchange Rate Mechanism II.

The gradual approach of the disinflationary process is justified by the necessity of avoiding sudden evolutions of the interest rate, this playing an essential role in maintaining financial stability.

The financial system has become more vulnerable in the context of the international financial crisis, as a result of leu currency depreciation and economic recession.The need to give a great importance both financial stability and also to the overall development of macroeconomic indicators, it may slow down the disinflationary trend. From this point of view, we can affirm that inflation has been affected by the international financial crisis.

The effects of financial crisis upon inflation rate have been positive (decreasing commodities prices, diminishing aggregate demand), but also negative (leu currency depreciation, increasing budgetary deficit).

If the measures to reduce budgetary deficit have exerted negative influence on the price stability criterion (the gap between average inflation rate and the Maastricht reference value grew up in the second half of 2010), external demand constrained by recession in the euro area has facilitated the fulfilment of the price stability criterion in Romania in April 2012, achieving its influencing the moment of adopting of the euro.

CHAPTER V
Estimation of inflationary effects of euro adoption in Romania

The adoption of the euro currency by Romania is conditioned by the participation in Exchange Rate Mechanism II for at least two years, being considered the ante-chamber of the integration to the euro area.

During the participation in Exchange Rate Mechanism II, Romania is obliged, according to the Maastricht Treaty, to respect the exchange rate fluctuation band of ± 15%. Consequently, the strict inflation targeting is no longer viable, but a more flexible form is necessary to ensure the fulfilment of the two criteria: the price stability and exchange rate criterion.

In our opinion, the reduction the inflation rate during the ERM II will be done in three ways:

1. If there are inflationary pressures provoked by supply-side factors (the hike in the oil price), their moderation will be realised through *the increase of the interest rate* in order to anchor of inflationary expectations.
2. In case of the price increase are caused by demand-side factors, the inflation reduction will be realized through *raising minimum reserve requirement, the application of a preventive credit policy in the case of consumption credits* and/or *the restrictiveness of the fiscal policy*, these measures not being accompanied by the interest rates increase. Their maintenance at a low level is necessary for the fulfilment of the other convergence criteria.
3. Although the depreciation of the leu by 15% is permitted, we consider that the *nominal appreciation* is necessary for the fulfilment of the inflation criterion. This necessity is imposed, on the one hand by the real appreciation of the national currency as a result of the real convergence process and, on the other hand, the exchange rate variations reflect themselves faster on the prices, compared with the interest rate, in which case the monetary impulses transmit themselves with a certain delay. In the case of the appearance of the too strong appreciation or depreciation of the leu, the NBR will intervene on the foreign exchange market, so that the national currency to be appreciated by a few percentage points, a favourable situation for the two nominal convergence criteria.

We consider that in order to realize the exchange rate stability objective, a combination of the two methods (diminishing of interest rate and intervention on the foreign exchange market) is necessary, using with priority the interest rate. The intervention operations on the foreign exchange market will effectuate in case which the reduction of the interest rate has not been sufficient to calm the appreciation of national currency.

Therefore, in the context of fulfilment of convergence criteria, the monetary policy can not ensure the price stability without the support of the other components of the macroeconomic policy – the fiscal policy and the exchange rate policy, imposing the necessity of coordination of a macroeconomic policy mix.

For the fulfilment of the two convergence criteria (price stability and budgetary deficit criterion), the *adjustment of the budget deficit must be based on the reduction of budget expenditure*, because the tax increase can have an inflationary character.

We consider that *limiting the structural deficit of 0.5%* (or of 1%, because the ratio of the general government debt to gross domestic product at market prices is significantly below 60 %) *could have a negative impact on the economic recovery* and, consequently, the catching-up vis-à-vis the European Union will be slowed. In this sense, it is impose increasing the absorption of European funds, increasing the collection of budget taxes.

Although the convergence criteria will be sustainable fulfil, as a membership of the euro area will have an impact on inflation rate in Romania.

There are several channels by means of which faster price growth, as a result of adopting the euro currency (Kominková, 2005, p.2):

- Implementation costs;
- Recalculation, so called "menu" costs,
- Rounding to a new attractive price in euro;
- Inflation perceived incorrectly by the public.

We consider that the rising prices as a result of the influence of the first three factors will be temporary, the last factor leading to inflationary spiral.

Assuming that the single currency will lead to an increase in the inflation rate in Romania similar to EMU Member States, we calculated based on the weight in consumer basket (for 2012) the contribution to the total monthly inflation rate both in the previous month of introduction of the euro (t-1 euro), and in the month of introduction of the euro (t euro). In this sense, *we built two scenarios.*

Comparing the results of our scenarios with the results of studies carried out on the basis of data series from Member States of the euro area, we remark that these are similar in scenario 2, since vegetables and fruits have a much higher in the consumer basket of Romanians, the contribution to total inflation rate of those goods being very high. Although the scenario 2 includes bread and cereals; milk, cheese and eggs (food of those weight in consumer basket of Romanians is high, as compared with of those of citizens Member States), the results are close, because services have less weight in the consumer basket (comparative with other states), the effects compensating.

One of the most significant factors though the introduction of the single currency will influence inflation is the *price level convergence*, on the long term. The inflationary impact of the adoption of the euro is argued that the relative prices level in our country is lower than in the euro area.

Romania's entry into the Economic and Monetary Union implies the transfer of the implementation and conduct of monetary policy to the European Central Bank.

Although we expect the increasing of correlation of supply and demand shocks in the euro area, the loss of monetary policy autonomy will have positive effects (elimination

of exchange rate fluctuations, stricter control on money supply) and negative (impossibility of damping the aggregate demand) upon inflation rate in Romania.

Consequently, *Romania* will register a inflation rate above the euro area average. The main consequences of the registration of a inflation rate above the euro area average are:

- decrease in real interest rates;
- loss of competitiveness.

Therefore, *the inflation differential vis-à-vis the euro area* may have a result a *inflationary spiral* (low real interest rates) and/or *increasing the current account deficit* (loss of competitiveness). But these negative effects may be avoided by *the application of a restrictive fiscal policy* which have an impact on both the domestic demand (avoiding inflationary pressures), and on imports (avoiding the increasing current account deficit). Also, the fiscal policies of those Member States which have trade linkage play an important role in the evolution of current account deficit. *In our opinion, the loss of competitiveness will not generate increasing the current account deficit and low real interest rates will have a minor impact on the inflation rate.*

The impact of low real interest rates on both the inflation rate, and the economy will persist, due to the process of prices convergence.

Conclusions and proposal

In this paper we proposed to analyze the inflationary process and monetary policy in the context of European integration from both a theoretical, and empirical point of view.

Analyzing the wide range of definitions of inflation and the forms of its manifestation, we remarked that although inflation is generated by a multitude of factors, it appears as a result of the manifestation of two essential causes: excess demand for goods and services and/or increasing production costs, other forms of inflation representing the causes of the imbalance on the goods and services market and of the increasing in costs.

Considering the negative effects upon the economy, inflation has become the main concern of the central banks. Thus, the monetary policy is considered to be the most important macroeconomic policy for achieving low and stable inflation, *its role* in the *candidate countries to the euro area*, consisting of intervention on monetary variables in order to achieve price stability, to avoid the strong appreciation of the national currency and to ensure sustainable economic growth.

After the completion of the transition to a market economy, the countries of Central and Eastern Europe have begun the process of economic integration with the European Union, inflation being extremely important in the candidate countries to the European Union.

The countries which joined in 2004 have recorded significant reductions in the inflation rate before EU accession, which signifies the importance of price stability in accession countries. The impact of accession on the inflation rate in these countries was both

positive and negative. A first factor that influenced consumer prices after accession is represented by *the adoption of the Common Agricultural Policy, but the impact was relatively small*, in some countries this is counterbalanced by cheap imported food products. The second factor that has exerted a negative impact on consumer prices was the *harmonization of tax legislation*, leading the price increases of excisable goods. Application of the *Common Customs Policy* constituted the third factor that influenced the inflation rate after accession to the EU, but the impact was positive.

Accession to the European Union implies the adoption of the euro in the moment of fulfilment of the convergence criteria, but the process of real convergence has inflationary effects. The need for real convergence can be explained by the low level of GDP/capita relative to the European average.

The inflationary impact of *the catching-up process* is generated by the manifestation of the Balassa-Samuelson effect by increasing wage cost in the service sector, on the one hand, and the increased demand for services as a result of the rising in the standard of living, on the other hand.

On the road to the euro, the monetary authority must define monetary policy strategy, so as to ensure simultaneous achieving nominal and real convergence, considering the conflict between objectives. At the same time, the definition of the objectives of monetary policy must be realised on two distinct periods: in the period prior the participation in the Exchange Rate Mechanism II and participation in the Exchange Rate Mechanism II.

The experience of the two countries (Slovenia and Slovakia) shows the need of macroeconomic policy mix to achieve sustainable convergence criteria. Thus, the inflation criterion is fulfil both by maintaining real interest rates at the optimum level, and by promoting a restrictive fiscal policy. Exchange rate stability is achieved both by reducing the interest rate and foreign exchange market intervention.

In *Romania*, inflation became a problem since November 1990, as a result of the implementation of the structural reform, necessary the transition to a market economy. Accelerating the inflation rate is the consequence of *repression of scarcity inflation* manifested during of the centralized economy.

Examining the influence of monetary factor, of wages and of external factor upon inflationary process in Romania in 1992-1999 and 2000-2006 period, we found different results.

In both periods, we remarked, as the main factor, *inertia of inflationary expectations.* The second significant factor in the period 1992-1999 was the wage, as a cost factor, due to its increasing rhythm considerably higher than the overall labour productivity.

Diminishing the growth rate of wages and rising labour productivity in 2000-2006 period explains insignificant influence of average gross wage upon inflation rate.

Another factor that explained the variation of inflation rate was *imported inflation*. Increasing the impact of this factor on the inflation rate in 2000-2006 period is explained by the increasing share of goods imported in GDP.

Membership of the European Union has imposed capital account liberalization, but *the impact of capital flows on the inflation rate can be diminished by monetary policy measures, but also by the use of capital flows*. In this regard, NBR has conducted sterilization operations of excess liquidity, the monetary base real growth being low. Although the money supply has accelerated since December 2004, as a result of the expansion of the credit, it was not inflationary, because the credits were used to the investment, in principal.

Unlike countries that joined in 2004, the average inflation rate in Romania dropped in 2007 with 1.72%. Change in the inflation rate in Romania has been generated by the adoption of the EU acquis and the policies and mechanisms specific to the European Union.

Adoption of the *Common Agricultural Policy* has had a *minor impact upon inflation rate*, due to the superiour level of prices afferent to the majority of food goods the intervention prices established by the European Union.

Instead, *the harmonization of tax legislation in the field of excise has had a major effect upon the inflation rate*, whereas the excisable goods and services held a relatively large weight in consumer basket. Negative effect of accession was counterbalanced by the application of *Common Customs Policy that reduced the imported inflation.* The impact was relatively high, because the majority of goods imported are from the EU, which justify the reduction in the inflation rate in 2007 for: food, beverages, tobacco, clothing and footwear, energy products.

Romania's accession to the European Union has an impact upon the inflation rate on long-term, generated by the obligation to fulfil the real convergence criteria.

The monetary policy has to play an important role in achieving simultaneous of the conflicting convergence criteria. The weakening of the relationship between aggregate monetary and inflation and risks of the use of the exchange rate as the nominal anchor in the context of the capital flows liberalization has led the implementation of other monetary strategy, namely the direct inflation targeting.

Although it displays certain inconveniences, the inflation targeting strategy ensures the fulfilling the nominal and real convergence criteria and, therefore, it will be used at least until the entry into the Exchange Rate Mechanism II.

Romania's entry into ERM II implies the change of monetary policy framework. Therefore, *the direct inflation targeting* in its strict form can no longer be used, but should be a more *flexible* to ensure fulfilling the two criteria: inflation and exchange rate criterion. We consider that the exchange rate targeting strategy would not be optimal, since the catching-up process will continue during this period.

Although fulfilling of price stability criterion will have as an effect the reducing the inflation rate, *the introduction of the euro will increase it*.

The results of the scenarios led us to the following conclusions:

- ✓ Introduction of the euro currency affects the inflation rate to a greater number of goods and services in t euro period. At the same time, the increase in inflation rate

is higher and, therefore, the effect of the introduction of the single currency will be higher in the t euro period, compared to the effect estimated t-1 euro period.

- ✓ The single currency affects, in particular, the prices of food and services. Whereas foods have a significant share in the Romanians consumption basket, the inflationary impact is relatively high, according to the results of scenario 1.
- ✓ Excluding a portion of food (fruit and vegetables) in scenario 2, the inflationary impact diminishes considerably, being similar to that estimated for the euro area states.

Another factor that will influence the inflation rate will be represented by the price level convergence, but the effect is on long-term. Inflationary impact is argued by the low price level of tradable goods in our country on the one hand, and low GDP/capital level relative to the European average, on the other hand.

Concluding, the Romania's accession to the European Union had an insignificant impact on inflationary process, but the need to fulfill the Maastricht convergence criteria will result in a reduction of the inflation rate at the level of the EU Member States. Fulfilling these criteria constitute a challenge for the monetary policy of the NBR, as a result of the existence of the conflict between them.

The introduction of the euro currency will determine an increase in the inflation rate similar to that recorded in the EMU Member States, leading to inflation differential vis-à-vis the euro area, differential what has implications upon Romanian and euro area economy.

SELECTIVE BIBLIOGRAPHY

1. Allen, M. et. al., *Inflation Targeting and the IMF*, International Monetary Fund, 2006
2. Allington, N.F.B. et. al., „One Market, One Money, One Price?", *International Journal of Central Banking*, nr.3/vol.1, pp. 73-115, 2005
3. Angeloni, I. et. al., „Economic and Monetary Integration of the New Member States Helping to Chart the Route", *ECB Occasional Paper Series*, nr.36, 2005
4. Arghyrou, M. G., „The Accession of Greece to the EMU: Initial Estimates and Lessons for the New EU Countries", *Liverpool Quarterly Economic Bulletin*, nr.4./ vol.27, pp.1-14, 2006
5. Backé, P. et. al., „Price Dynamics in Central and Eastern European EU Accession Countries", Oesterreichische Nationalbank, *Working Paper*, nr. 61, 2002
6. Bătrâncea, I., „The Financial Crisis and its Implications on the Public Deficit of the EU Countries", *The Annals of the University of Oradea. Economic Sciences*, Issue Special/vol.1, pp. 267-271, 2011
7. Bătrâncea, L. M. et. al., „The Roots of the World Financial Crisis", *University of Oradea, The Journals of the Faculty of Economics – Economic*, nr.1/vol.3, 2009, pp.57-62
8. Beko, J., Festić, M., *Disinflation Policy in Slovenia and ERM II*, 2005, oliver.efri.hr/~euconf/2005/files/.../1st%20beko%20festic%20.pdf
9. Bernanke, S. et. al., *Inflation Targeting: Lessons from the International Experience*, Princeton University Press, Princeton, 1999
10. Borowski, J., Brzoza-Brzezina, M., „Designing Poland's Macroeconomic Strategy on the Way to the Euro Area", *EUI-RSCAS Working Paper*, nr.10, 2004
11. Boughrara, A., *On the Conduct of the Monetary Policy in Tunisia: Strengths, Weaknesses and Operational Guidelines*, 2004, www.univ-orleans.fr/deg/GDRecomofi/Activ/boughrara_birmingham.pdf
12. Brada, J. C., Kutan, A. M., „The End of Moderate Inflation in Three Transition Economies?", Federal Reserve Bank of St. Louis, *Working Paper*, nr.99-003A, 1999
13. Cocriș, V., Căpraru, B., „Controversies on the Central Bank Main Objective of Price Stability", *Economie Teoretică și Aplicată*, vol.9, pp. 11-20, 2008
14. Cocriș, V., Căpraru, B., „The Reform of National Bank of Romania after Accession to EU: Challenges and Perspectives", *Annals of University of Oradea, Economic Sciences*, nr.1/vol. 3, pp.713 – 718, 2008
15. Csajbók, A., Csermely, A., „Adopting the Euro in Hungary: Expected Costs, Benefits and Timing", Magyar Nemzeti Bank, *NBH Occasional Papers*, nr.24, 2002

16. Cuaremma, J. C. et. al., „Price Level Convergence in Europe: Did the Introduction of the Euro Matter?", Austrian Central Bank, *Monetary Policy & The Economy*, Q1, pp. 100-113, 2007
17. Damian, M., „Evaluation of Optimal Monetary Policy Strategy in Romania in the Context of Fulfilment of Convergence Criteria", *Romanian Journal of Economics*, nr.2(42)/vol.33, pp.146-168, 2011
18. Damian, M., „The Comparative Analysis of the Monetary Policy Strategies before the Adoption of the Euro Currency and the Impact upon the Maastricht Criteria", *Journal of Applied Economic Sciences*, nr.3(17)/vol. VI, pp.222-229, 2011
19. Dăianu, D., Kallai, E., „Disinflation and Inflation Targeting in Romania", *Romanian Journal of Economic Forecasting*, nr.1, pp. 59-81, 2008
20. Djurović-Todorović, J., Djordjević, M., „Experiences with Different Monetary Strategies", *Economics and Organization*, nr.1/vol.4, pp. 29 – 39, 2007
21. Doliak, M., „Evaluation of the Common Agricultural Policy's Impact on Food Prices following Slovakia's Accession to the EU", National Bank of Slovakia, *BIATEC*, nr. 11/vol. XII, pp.2-8, 2004
22. Duarte, M., „The Euro and Inflation Divergence in Europe", Federal Reserve Bank of Richmond, *Economic Quarterly*, Summer, pp.53-70, 2003
23. Dvořák, T., „Are Capital Inflows in the Czech Republic Inflationary?", *Eastern European Economics*, nr.3/vol.35, pp.35-65, 1997
24. Égert, B., „Catching-up and Inflation in Europe: Balassa-Samuelson, Engel's Law and other Culprits", OECD Economics Department, *Working Papers*, nr. 792, 2010
25. Fernández, A. M., Sánchez-Robles, B., *An Attempt to Modelize the ECB's Monetary Policy*, 2004 , www.ecomod.net/conferences/ecomod2004/ecomod2004_papers/37.pdf
26. Filáček, J. et. al., „Monetary Policy before Euro Adoption: Challenges for EU New Members", The William Davidson Institute, *Working Paper*, nr. 853, 2006
27. Filippeli, T., „Inflation Differentials in EMU: What Can We Learn from the Time Series Evidence?", *Economics Bulletin*, nr.3/vol.31, pp. 2541-2548, 2011
28. Frőmmel, M., Schobert, F., „Nominal Anchors in EU Accession Countries – Recent Experiences", *Discussion paper*, nr. 267, 2003
29. Honohan, P., Lane, P., „Divergent Inflation Rates in EMU", *Trinity Economics Papers*, nr.20034, 2003
30. Jonas, J., „Euro Adoption and Maastricht Criteria: Rules or Discretion?", Center for European Integration Studies, *Working Paper*, B14, 2004
31. Kattai, R., „Analyzing the Suitability of the Currency Board Arrangement for Estonia's Accession to the EMU" in *Modelling the Economies of the Baltic Sea Region*, pp.167-205, University of Tartu, 2004
32. Moore, D., „Inflația în România - Evoluții și factori determinanți ", *IMF Staff Paper*, 2000

33. Nerlich, C., *Exchange Rate Strategies of EU Accession Countries: Does Exchange Rate Policy Matter?*, European Central Bank, 2002
34. Nier, E. W., „Financial Stability Frameworks and the Role of Central Banks: Lessons From the Crisis", *IMF Working Paper*, nr. 70**,** 2009
35. Orbán, G., Szalai, Z., „The Expected Effect of the Euro on the Hungarian Monetary Transmission", *MNB Background Studies* nr. 4, 2005
36. Orlowski, L, Rybinski, K., „Implications of ERM2 for Poland's Monetary Policy", *Economic Systems*, nr.4/vol.30, pp.346–365, 2006
37. Rogers, J. H., „Price Level Convergence, Relative Prices and Inflation in Europe", Board of Governors of the Federal Reserve System, *International Finance Discussion Papers*, nr.699, 2001
38. Rostowski, J., „The Approach to EU and EMU Membership: The Implications for Macroeconomic Policy in Applicant Countries", CASE-Center for Social and Economic Research, *Working Paper*, nr.26, 1999
39. Seman, J., Doliak, M., „Accession to the European Union, the Common Agriculture Policy of the EU and its Impact on Food Prices after Slovakia's Accession", *BIATEC*, nr.7/vol.XI, 2003
40. Spulbăr, C. et. al., „The Analysis of the Monetary Policy Dynamics in Romania using a Structural Vector Autoregressive Model", *Finance – Challenges of the Future*, nr.11/vol.1, pp.128-140, 2010
41. Stoica, O., Căpraru, B., „Impactul politicii monetare unice europene asupra celei românești", *Analele Științifice ale Universității „Al. I. Cuza" Iași*, Științe Economice, Tomul XLVIII, pp.314-318, 2002
42. Stoica, O., *Toward Successful Euro Adoption in Romania*, 2004, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=952412
43. Sturm, J. E. et. al., The Euro and Prices: Changeover-Related Inflation and Price Convergence in the Euro Area, European Economy, *Economic Papers*, nr.381, 2009
44. Šuster, M., „The Effects of Euro Adoption on the Slovak Economy", National Bank of Slovakia Research Department Report, *Working Paper*, nr.1, 2006
45. Syrichas G., „Monetary Policy Strategy And The Euro: Lessons from Cyprus", Central Bank of Cyprus, *Working Paper Series*, nr.6, 2008
46. Trenca, I. et. al., „Considerations on Monetary Policy Held by the Central Bank to Adopt the Euro", *Annals of University of Oradea, Economic Sciences*, nr.1/vol.1, pp.443-448, pp. 2010
47. Trenca, I., Păun, D., „Policies of the Commercial Banks Liquidity Management in the Crisis Context", *Annals of University of Oradea, Economic Sciences* , nr.1/vol.3, pp. 674 – 681, 2009
48. Weyerstrass, K. et. al., „Economic Spillover and Policy Coordination in the Euro Area", European Commission, *Economic Papers*, nr.246, 2006

49. *** *EMU@10: Successes and Challenges after 10 Years of Economic and Monetary Union*, European Economy, nr.2, 2008
50. *** *Euro Changeover Effect on Inflation in Slovenia*, Government of the Republic of Slovenia, Institute of macroeconomic analysis and development, 2007
51. *** *Euro Changeover Effects*, Eurostat, Euro-Indicators, news release, anexe, 2003
52. *** *Programme for ERM II Entry and Adoption of the Euro*, Bank of Slovenia, November 2003