Central Bank Independence and Inflation Targeting. The Case of Romania

Florin Cornel Dumiter

There is a widespread agreement among central bankers around the world that the stability of the national currency should be entrusted to independent central banks. There are two arguments supporting this idea: 1. to achieve macroeconomic stability, a low and stable inflation is required, an independent central bank having the means and the tools to pursue it as opposed to governments that through its spending often trigger high inflation rates; 2. an independent central bank can signal effective and credible inflation expectations by implementing an effective monetary policy. In our opinion, over the last twenty years, there has been a sustained trend towards central bank independence, governments around the world being aware that independent central banks can sustain growth. A great number of central banks have adopted an inflation targeting regime, given its advantages as compared to classical monetary anchors (i.e. money supply and foreign exchange rate) of an increasing number of central banks. The first section of the paper is a survey of the literature concerning central bank independence and inflation targeting. The second section deals with aspects of central bank independence and inflation targeting in Romania over the last two decades. In the final section an index for central bank independence and inflation targeting is developed using the following three groups of variables: political and legal central bank independence, central bank governance and conduct of monetary policy and central bank transparency and accountability.

The paper concludes that the new index for central bank independence and inflation targeting can eliminate the differences between de jure and de facto independence in order to measure independence both for developed countries and *emerging countries based on some legal aspect and of some actual practice and behaviour of the central banks.*

Keywords: *central bank independence, inflation targeting, monetary policy, price stability, central bank credibility*
JEL Classification: *E50, E52, E58*

1. Theoretical underpinnings of central bank independence and inflation targeting

Central bank independence is a multi-dimensional concept, quite difficult to be assessed and quantified. In fact, there is no single definition or measurement for central bank independence. However, several attempts in the literature to categorize the different notions of central bank independence have enhanced the understanding of this multi-faced concept.

For understanding this multi-faced concept, Grilli, Masciandaro and Tabellini (1991) had distinguished two essential components of central bank independence: *political independence and economical independence.* According to Grilli, Mascindaro and Tabellini, central bank *political independence* is influenced by a number of variables like: the election of central bank governor and the members of the board, the term of office, and the statutory objective of price stability as the single objective for monetary policy. *Economic independence* represents the overall control of central banks regarding the volume and conditions of government lending. *Economic independence* also depends on the ability of the central bank to choose and to use the appropriate monetary policy tools, especially the interest rates and the prudential supervision of the banking system.

The central bank independence problem was also studied by Debelle & Fischer (1994) in terms of *goal independence* and *instrument independence. Goal independence* represents the freedom of the central bank in setting its final objectives; there is a distinction between price stability and the output level, because the central banks will be more independent if the price stability objective is stated in the central banks statue. In this case, the definition of *goal independence* excludes the political pressures which can appear once the monetary policy objectives were established. *Instrument independence* means the freedom of the central bank in choosing the appropriate tools for achieving the final objectives.

Other authors like Loungani & Sheets (1997) distinguished three types of independence: *goal independence, economic independence* and *political independence*. *Goal independence* is defined as the specific formulation of the price stability objective, as the main goal of monetary policy, in the central bank statue; *economic independence* have the same interpretation as Grilli, Masciandaro and Tabellini, and *political independence* which is considered as: appointment and dismissal of the central bank board, the term of office and degree of government participation to the monetary policy decisions.

Recent empirical studies provide evidence that independent central banks foster lower and less volatile inflation rates but, do not appear to produce lower or more volatile output. Based on this evidence, some authors have concluded that central bank independence is a "free lunch" that delivers price stability without apparent real output costs. This approach is questionable since many countries did not establish independent central banks. Some explanation rests on the existence of a credibility versus flexibility trade-off associated with the setting up of an independent central bank. Lohman (1992) and Cukierman (1994) developed models where the central bank independence originates a trade-off between the credibility gains associated with central bank independence and the flexibility costs arising from a suboptimal stabilization policy.

Issing (2008, p. 206) has argued that:" I have a lot of sympathy for the idea that an independent agent must be controlled somewhat by the principal. 'Public choice' people have designed punishments for such shortcomings as exceeding the inflation target. Their intention was to design a control mechanism that doesn't undermine political independence, because if the principal is the controller, one is never sure for what reasons the agent is dismissed or punished. This is a difficult issue to solve. Certainly, the broader the mandate is, the more political it is, and the more difficult it is not to interfere from the political side. If the mandate is very narrow – price stability – then it's very difficult to make the central bank responsible for something else; the discussion remains focused on how the central bank delivers on this precise objective. In principle, I follow Willem's thinking, but I'm still awaiting a convincing proposal".

Central bank independence is designed to insulate the central bank for the short – term and often myopic political pressures associated with the electoral cycle. Elected officials have incentives to deliver benefits before the next election even if the associated costs might make them undesirable from a longer – term perspective. This phenomenon has been called the political business cycle in which pre-election stimulus leads higher inflation followed by monetary restraint after the elections (Crispin, 2006; Pollard, 2003).

In our opinion the logic of central bank independence can be noticed by looking at the different views of elected politicians and of central bank decision makers. Democratic leaders run for office promising change and improvement rather than continuity and stability, whereas an incoming head of a central bank will almost certainly want to continue the policies of a successful predecessor and will emphasize his or her commitment to do so. Political independence and non-partisan monetary policy provide the promise of monetary policy stability over time, which in turn stabilizes expectations in asset market. Such stability and continuity are essential for a successful monetary policy.

Central bank independence requires that the head of the bank has a term of office long enough to prevent government revision of the monetary policy decisions. However, such structural features of central bank's institutional design are only the starting point for central bank independence. If the government publicly attacks the central bank's policies, then the independence will certainly be incomplete.

Another very important aspect highlighted in the literature on central bank independence represents the *legalistic illusion* debated by André Orléan (2008), which views the enforcement of law as the main source of credibility. Its most visible manifestation can be found in the importance attached to the statues of central banks. Thus, for example, most of the indicators able to measure the independence of central banks are constructed by encoding legal data, and especially their statues. This *legalistic conception* has already been the object of criticisms (Cukierman, 1994; Forder, 1996; King, 2001). It had been pointed out that a wide discrepancy can exist between *de jure* independence, as measures by these indicators, and *de facto* independence, as revealed by actual behaviour. Two explanations might exist: either the incompleteness of the law, with grey areas in the definition of rights and obligations, or structural and significant differences between the provisions of the law and actual practices.

In addition, the government must be constrained to act according to law. The government, as trustee of sovereignty, possesses not only a whole arsenal of means of exerting pressure, but also considerable prerogatives in legislative matters. At the very least, it retains the capacity to draw new laws. Thus, the aptitude of laws to subjugate the sovereign government credibly appears to be highly questionable. There are a number of examples where governments have contravened constitutional clauses without any difficulty.

In democratic societies there is always some discomfort in giving non-elected officials the authority to conduct policy that is important to almost every citizen. Adoption of a credible nominal anchor and achieving price stability, however, require an important precondition for a successful monetary policy: central bank independence. Although there is a strong rationale for the price stability goal and adoption of a nominal anchor implies an authority that must be able to set the goals for the monetary policy.

Regarding this aspect, Mishkin (2007) dilemma is that should central bank independently announce its commitment to the price stability goal and what nominal anchor it is choosing, or would it better to have this commitment be mandated by the government. According to Mishkin (2007), goal independence is the ability of the central bank to set its own goals for monetary policy, say a goal of 2 percent inflation rate two years in the future; instrument independence is the central bank's ability to independently set monetary policy instruments, for example, the level of the interest rate, to achieve its goals. The fundamental democratic principle that the public must be able to exercise control over the government actions strongly suggests that the goals of monetary policy should be set by the elected government. In other words, Mishkin (2007) suggests that central bank should not be goal independent. The corollary of this view is that the institutional commitment to price stability should come from the government in form of an explicit, legislated mandate for the central bank to pursue price stability as its overriding, long-run goal.

The inflation targeting regime recognizes the importance of the inflationary phenomenon in modern economies, and, implicitly, the fact that ensuring price stability represents the most efficient way for the monetary policy to sustain the overall objective of long-term economic growth. After being widely used in industrialized countries in the 1990s, the direct inflation targeting strategy has become, in the aftermath of the Latin American and Asia crisis, an attractive alternative for emerging countries as well.

Developments in macroeconomic theory played a key role in the growing popularity of the inflation targeting approach. These developments included reduced confidence in activist, countercyclical monetary policy; the widespread acceptance of the view that there is no long-run trade-off between output (unemployment) and inflation, so that monetary policy affects only prices in the long run; theoretical arguments for the value of precommitment and credibility in monetary policy (Kydland & Prescott, 1977; Calvo, 1978; Barro & Gordon, 1983); and an increasing acceptance of the proposition that low inflation promotes long – run economic growth and efficiency.

King (2002) show that not only has inflation been lower since inflation targeting was introduced, but that, as measured by its standard deviation, it has also been more stable than in recent decades. Moreover, inflation has been less persistent – in the sense that shocks to inflation die away more quickly – under inflation targeting than for most of the past century.

For some performances measures, both inflation targeters and nontargeters improve over time, but the improvements are larger for targeters. For example, average inflation fell both groups between the pretargeting and targeting periods, but the average for targeters went above that of nontargeters to roughly the same. These findings have led authors such as Neumann and von Hagen (2002) argue that inflation targeting promotes "convergence": it helps poorly performing countries catch up with countries that are already doing well.

As the International Monetary Fund stresses to countries that are considering the adoption of inflation targeting, the keys to success are transparency and accountability. Carson, Enoch & Dziobek (2002) suggest that once a political decision has been taken to make the inflation target the primary objective of monetary policy, it is crucial for the monetary authorities to keep the public regularly informed about the actions they have taken to meet that objective and the basis for the adjustments that they make. Perhaps even more than other monetary regimes, inflation targeting obliges the central bank to safeguard its credibility in pursuing the inflation goal. For this reason, inflation targeters are almost invariably countries in which the central bank has a high degree of independence. But it is also important to avoid a deflationary bias, which would impose unnecessary costs on society and risk undermining the political basis for the inflation – targeting regime and the independence of the central bank.

The motivations for inflation – targeting approach have been varied. In a number of cases, such as those of the United Kingdom and Sweden, the collapse of an exchange rate peg led the monetary authorities to search for an alternative *nominal anchor* for monetary policy, a way of reassuring the public that monetary would remain disciplined. The demise of a fixed – exchange – rate regime similarly motivated the adoption of a money – focused approach by Germany in the mld-1970s. Some countries, such as Canada, came to inflation targeting after unsuccessful attempts to use a money-targeting approach. For example, in the case of Canada, by 1980 inflation was as high as it was in 1975 (10 percent per year) despite adherence to monetary targets that lead to lower money growth (Howitt, 1993). In other cases, countries by tight monetary policies had successful in reducing their core rate of inflation adopted inflation targeting regime as an institutional means of locking in their inflation gains.

2. Evidence of central bank independence and inflation targeting in Romania

Analyzing the economic literature regarding evidence of central bank independence and inflation targeting in Romania we can observe a lack of studies in dealing this aspects. However the most comprehensive study regarding central bank independence in Romania is the one of Cerna, Donath and Dima (2004). The authors analyze central bank independence in Romania regarding aspects as: historical overview – central banking pre – 1989/1991, the financial banking reform after 1989/1991 and the principal steps of the monetary policy construction between 1991 and 2001, the organisation of the National Bank of Romania (NBR) according to its statute (law no. 34/1991 and law no. 101/1998), the main objectives of the NBR and the monetary policy instruments, prudential supervision and operation with the public sector until adopting the new NBR statute (law no. 312/2004). This study also measure central bank legal independence in Romania according to the law no. 101/1998 using the following indices: Bade & Parkin (1988), Grilli, Masciandaro and Tabellini (1991) and Cukierman (1992).

Cerna, Donath & Dima (2004) suggest that central bank legal independence in Romania have a high degree measures with all three indices mentioned above; according to the law no. 101/1998, the NBR is totally independent in the formation and execution of monetary policy and foreign exchange decisions, and is not accountable to any political entity. Moreover the authors reveal that after several crises at the end of the 1990s, the Romanian banking system recorded a visible improvement in terms of capitalisation and financial performance of registered banks, partly as a result of the improved prudential supervision rules implemented by the NBR.

In order to analyze central bank independence and inflation targeting in Romania, we will analyze the new central bank statute of the NBR (law no. 312/2004) according to: personnel, political and legal central bank independence, we will measure central bank legal independence according to three indices: Bade & Parkin (1988), Grilli, Masciandaro and Tabellini (1991) and Cukierman – LVAU (1992); an important aspect will be the adoption of the inflation targeting strategy in Romania in 2005 and the future developments of the inflation in the following periods.

Personnel independence of the National Bank of Romania (NBR)

The main attributions of the Board of NBR are: to establish the monetary and exchange rate policies, to take the appropriate measures concerning authorization, regulation and monitoring lending institutions, to establish the wages and other financial endowments of the bank's staff. The NBR Board is composed of nine members, as follows: president (i.e. Governor of the NBR), a prime vice president (i.e. prime vice Governor), two vice presidents, and five members. The members of the NBR Board are appointed by the parliament at the proposal of the government for a five year term, each member able to be reappointed once. The Parliament can remove from office a Board member if this member no longer fulfils the duties required or if he is charged with a serious misconduct. The Board members cannot be senators or deputies, members of a politic party, cannot hold office in the judicial authority; however, they can participate to scientific research and educational activities.

The Governor of the NBR can undertake the appropriate measures for implementing the requirements of the banking laws, appoints the senior personal of the NBR as well as the agency and branch directors. It can be notice that all of the appointments are undertaken without any interference from the central or local government, granting the NBR staff a high level of personal independence. The Governor represents NBR by signing directly or through authorized persons treaties and conventions. By authorization of the Board, the Governor is accountable to the Parliament by presenting the annual report; this document containing: the activities of the NBR, the annual financial stance, the audited report. However, the NBR statue does not stipulate the approval of the Parliament or the potential measures the Government might undertake. Law no. 312/2004 stipulates the examination of the NBR assets assessment, of the balance of payments; of the accordance between the state securities in the NBR books and the provisions of the state budget, of independent auditors' appointment. For this purpose, the NBR Board selects upon public auction independent auditor companies.

Political independence of the National Bank of Romania

Law no. 101/1998 stipulated the following aspects concerning the NBR objectives (Art. 2.): "The primary objective of NBR is to ensure the stability of the national currency in order to support price stability. In order to achieve its primary objective, NBR draws up, implements and is responsible for the monetary, foreign exchange, lending and payment policies, as well as for bank licensing and prudential supervision in accordance with the general policy of the State, aimed at ensuring both the well-functioning of the banking system and the promotion of a financial system specified to a market economy". Analyzing this article a redundant aspect can be identified, both monetary stability and price stability being mentioned; this redundant aspect can be regarded positively, by eliminating the monetary policy dilemma of the internal and external dimension of the price stability. In cases of the internal and external dimensions conflicts of monetary stability, the internal one has precedence. However, if there is no conflict between price stability and exchange rate, then the NBR accomplished both aspects of monetary policy. Other aspects have been identified too: the words "contribute" instead "maintain" (price stability). This problem implies two fundamental aspects: 1. the causes of inflation in emerging economies; 2. the NBR ability to effectively control the inflationary dynamics.

Law no. 312/2004 stipulates more precisely the main objectives of the NBR (Art. 2): "The primary objective of the NBR shall be to ensure and maintain price stability". Accordingly, NBR sustains the general economic state policy, without prejudice to its primary objective.

Economic independence of the National Bank of Romania

Regarding the money market operations, direct purchase by the NBR of debt instruments issued by national and local public authorities, autonomous administrations, national corporation, national companies and other majority state-owned companies in the primary market is prohibit. NBR may perform in the secondary market reverse operations, outright purchases/sales or may grant credit collateralized by the pledge of claims against or securities of the State, national and local public authorities, autonomous administrations, national corporations, national majority and other majority stated-owned companies, credit institutions or legal entities, may execute foreign exchange swaps, issue certificates of deposits and collect deposits from credit institutions, under the term it deems appropriate for achievement of its monetary policy objectives.

In accordance with its monetary and exchange rate policies, the NBR may grant loans with maturities no longer than 90 days to credit institutions, against collateral consisting of, but not limited to: government securities from public issues, by their remittance into the National Bank of Romanian's portfolio or deposits with the National Bank of Romania or with other legal entities agreed by the National Bank of Romania.

NBR have the exclusive competence to authorize credit institutions and is responsible for prudential supervision of credit institutions authorize to operate in Romania. The central bank may act as the State's agent in selecting the credit institutions eligible to collect deposits of the State Treasury, under the terms established with the Ministry of Public Finance.

In compliance with the stipulation on the statue, direct purchase by the NBR of government securities in the primary market is prohibited. However, according to the agreement with the Ministry of the Public Finance and to its own regulations, the NBR may act, as agent on behalf of the State, so as to: place with third parties government securities and other negotiable debt instrument issued by the Romanian Government, act as registrar, depository and transfer agent for government securities, repay principal and pay related interest, fees and commissions, perform settlement operations in compliance with the central bank's primary objective and tasks.

Measuring central bank independence in Romania

According to the Bade & Parkin (1988) index, NBR has a high degree of independence (Appendix A). Appendix B and C show the degree of central bank independence of NBR measured with Grilli, Masciandaro & Tabellini (1991) index; the results show a high level of central bank independence (13 points): political independence – 7 points and economic independence – 6 points.

The 0.66 score of Cukierman (1992) independence index LVAU shows that NBR has a high degree of legal independence. However, a word of caution is necessary concerning the index measurement. Firstly, compared to the previous law (no. 34/1991) the governor's term of office decreased from eight to six years according to law no. 101/1998, and according to the stipulation of the law no. 312/2004 the term decreased to five years. This term reduction is countervailed by the fact that government can't interfere in Governor appointing procedures; the LVAU index does not emphasise this fact. The NBR Governor can be dismissed only for non – political reasons strictly mentioned in NBR statue. Secondly, law no. 312/2004 doesn't stipulate the resolution of a potential conflict between government and central bank. NBR has a consultative role in establishing the terms of loans granted to the public sector. The central bank has a consultative role because it formulates its opinion referring to the public debt problems, without interfering in the real resolution of these problems.

The legal independence of the NBR is comparable to the independence of other monetary authorities in emerging countries. The existing differences appear from the developments of the central bank laws and from the *old* and *new* institutional frame. An important characteristic of the monetary organization of the euro zone countries represents the independence of the central bank. In Romania, this criterion is accomplished both *de jure* and *de facto*. According to law no. 312/2004, the NBR is independent in formulating and implementing monetary policy and the decision regarding the exchange rate; the central bank is not accountable over a political entity.

Inflation targeting in Romania

The NBR had introduced the inflation targeting regime in 2005. This monetary policy strategy brings a series of benefits for a central bank, including a clear focus on inflation. In the same time, the Romanian central bank was in need to unburden its monetary policy in order to achieve further disinflation. But, three main contradictory pressures have been likely to arise: first, the requirements imposed by the need to achieve nominal and real convergence with a view of joining the European Union in 2007 and European Monetary Union at a later stage push the central bank toward a policy mix that is able to ensure growth and further disinflation. Second, under inflation targeting the *divine coincidence* of inflation stabilization and real stabilization objective can be achieved only in specific economic circumstances. Third, the operational requirements of a *hard* inflation targeting regime have been unlikely to exist under the current monetary transmission conditions.

The new statue of the NBR can be considered the starting point of the transition to the new inflation targeting regime. Law no. 312/2004 assures the appliance of the European provisions and consolidation of the adequate institutional framework for the successful implementing inflation targeting throughout the responsibilities of the central bank over the success of monetary policy and the independence from the political authorities.

Starting from June 2004, NBR has adopted several flexibility measures of the exchange rate through decreasing the dimension and the frequency of interventions in the currency market; from November 2004 the central bank has increase the exchange rate flexibility, measure undertaken for the transition to a crawling band.

Once the inflation targeting has been adopted, NBR chose a new set of communication instruments for increasing the degree of the monetary policy transparency:

- monetary policy strategies, by presenting the objectives, priorities and the short and medium term monetary policy risks;
- the Inflation Report with biannual frequency starting from 2001, and published quarterly from 2005;
- Press Communicates after the Board meetings, in which in can be undertaken modification of the monetary parameters;
- Studies and International scientific conferences.

The Romanian inflation target is established in terms of Consumer Price Index (CPI), having a band of ± 1%, annual targets of an initial two year horizon; the target is established in conjunction with the Government. In the second part of 2005, NBR has announce the ± 1% target range and the time horizon, which initial was at six quarters and after enlarge at eight quarters at the end of 2006. Although it is an important component of regulated prices in CPI, the rationale for choosing CPI instead of core inflation it is justified by CPI's larger public transparency and availability. The CPI is determined by the National Statistical Institute, which is an entity independent from the central bank. Core inflation has an analytical role and it is calculated by the NBR as following:

- CORE1= CPI – administered prices
- CORE2= CORE1 – volatile prices (vegetables, fruit, eggs, fuels)
- Adjusted CORE2 – the influence of excise duties and vice tax is removed

Inflation developments after adopting inflation targeting

After adopting the inflation targeting regime, the inflation rate entered a downward trend, in the Quarter 4 of the year 2005 the annual inflation rate stood at 8.6 percent, overshooting the ± 1 percentage point around the 7.5 percent target establish for 2005. The unexpected large supply side shocks augmented by the excess demand in the final months of the 2005 were the main factor for the deviation of the inflation rate. The disinflation process continued in 2006 the annual inflation rate at the end of 2006 stood at 4.8 percent, slightly below the 5 percent establish by the NBR; the chief driver was the pronounced drop in prices for fruit and vegetables as a result of a bountiful crop in 2006 and the base effect induced by the unfavourable supply – side shock in 2005.

At the end of the Quarter 4 of 2007 the annual inflation rate reached 6.57 percent, being outside the corresponding target of 4 percent ± 1 percentage point, the main drivers of this development were the supply of agri – food items, the depreciation trend of the national currency and the adverse influence exerted by higher fuel prices. In 2008 Quarter 3 we can see that the inflation rate entered a downward trend, the annual inflation rate at the end of September stood at 7.30 percent, remaining outside the ± 1 percentage point variation band around the 2008 target of 3.8 percent; the main drivers of this performance were the dissipation of the supply – side shock which had affected the agri – food market with the latter half of 2007 and, towards the quarter – end, the favourable base effect associated therewith.

Figure 1 – Inflation developments in Romania

Note: ±1 percentage point around the (dis)inflation path

Source: NIS, NBR calculations

3. Measuring central bank independence and inflation targeting

The empirical substantiation of central bank independence is based on the fact that, on average, countries with more independent central banks reach comparatively low inflation rates without real economic costs in terms of lower economic growth or higher output volatility. In fact, many empirical studies on the relationship between central bank independence and inflation confirm a negative relationship between inflation and central bank independence. However, the derivation of these findings is based on the use of different measures of central bank independence. For industrial countries, legal indices are mainly used for central bank independence, whereas for developing countries, more behaviourally oriented indicators are used (Cukierman, 1996; Eijffinger & De Haan, 1996). In addition, there appears to be hardly any correlation between central bank independence and disinflation costs. However, it is questionable whether these empirical findings between central bank independence, inflation, output and disinflation costs can be seen as stylized facts. More recent studies have questioned the consistency of the indicators used to measure central bank independence, the robustness of the statistical associations and interpretation of causality ascribed to them.

The paper intends to present an index for both central bank independence and inflation targeting. In our opinion, the links between central bank independence and inflation targeting consists in the need for *credibility,* an important aspect in central banking that might be achieved through a high level of central bank independence. In the monetary real, as the term is employed in the literature on monetary economics and central banking, authority is dependent ultimately upon *credibility* that the central bank will act to ensure price stability – to back up the *promise* that the money it issued constitutes. Although there are varying concepts upon the credibility definition in the literature on central banking, most of them are currently used as tied to the institutional independence of the central bank from government pressure on monetary policy.

In our opinion the main correlation between central independence and inflation targeting represent two important aspects: *transparency and accountability*. There is a widespread agreement in the economic literature that independent central banks must be accountable for achieving monetary policy objectives. There must be put in place active mechanisms of the democratic central banking responsibilities for creating an autonomous central bank, for achieving it's objectives and explain to the public the measures that have been undertaken. In this sense, it is necessary a high degree of monetary policy transparency for the public monitoring of the monetary policy performances.

A first aspect regarding transparency represents the fact that in democracies the central bank is accountable to the Parliament. Accordingly, the laws stipulate that central bank governors participate at meetings together with parliamentary organisms, explaining and justifying their monetary policy actions. The central bank is accountable to the public by reporting regularly its achievements in publications: monthly, quarterly, annually, financial statistics and inflation reports. A key element of accountability is defining the last objective through the central bank is accountable. Moreover, a public announcement of the monetary policy intermediary target chosen for achieving this objective can enhance transparency. Within inflation targeting regime transparency is essential because the inflation projections are better understood by the public. A direct inflation target is a reflection of the price stability objective.

The new index for central bank independence and inflation targeting is constructing as a sum of numerical values assign to thirty eight institutional arrangements both in law and practice of central banks: nine attributes each for political and legal central bank independence, fifteen attribute for central bank governance and conduct of monetary policy and fourteen attributes for central bank transparency and accountability. These three groups, namely *political an legal central bank independence, central bank governance and conduct of monetary policy and central bank transparency and accountability* take a maxim value of 90, 150 and 140 each, and gives a maximum aggregated of 380 for the new index of central bank independence and inflation targeting. This index can be called a weighted index of central bank independence and inflation targeting with a scale of 0 – 380, since attributes are weighted unequally. The score assign to each criterion is aggregated to obtain the final value of the index. Higher the value assign to each criterion, higher will be the maximum score of the index. Appendix E presents the variables of the index and their coding.

This index is better called as a *de facto* or *actual* index rather than a *de jure* one because the aggregated value is based on the actual institutional practices or norms of central banks and not necessarily what is written in the central bank laws. However, the new index for central bank independence and inflation targeting is an interpretation based on these laws, which are put into actual practices and those practices that are not in law.

Conclusions

The empirically observed trend towards a more independent central bank and an efficient inflation targeting regime is supported to a large extent by modern theory of monetary policy. The main idea of different approaches is that central banks which are independent from government influence are able to reduce the inflation bias without having to implement completely inflexible rules. However, monetary theory does not conclude that establishing an independent central bank alone leads to an improvement in social welfare. To achieve this, either the preferences of the independent central bank must differ from those of the government in an appropriate way, and / or the independently acting central bank must be provided with policy targets or incentive structures.

The vast majority of the empirical studies dealing with the relationship between central bank independence and macroeconomic performances confirm a negative relationship between central bank independence and inflation. The extent of central bank independence is measure with help of legal indices for industrialized countries, while for developing countries variables like the actual turnover rate of the central bank Governor as used as proxy for actual independence. However, increasing central bank independence might be combined indirectly with higher costs in terms of real economic performances and some studies conclude that disinflation costs positively correlate with the degree of central bank independence.

The main purpose of this paper was to construct a new index for central bank independence and inflation targeting. In the economic literature were indices for measuring only central bank independence *de jure* for developed countries and *de facto* for emerging countries. The index for central bank independence and inflation targeting wants in the first place to eliminate the differences of *de jure* and *de facto* independence for measuring independence both for developed countries and emerging countries based on some legal aspect and of some actual practice and behaviour of the central banks. In the second place, we consider that inflation targeting and central bank independence are mutually reinforcing. By increasing central bank independence this fact will automated lead to an increase transparency and accountability of the central bank, conducting to a higher credibility of the central bank and automated to an efficient inflation targeting regime. Moreover, an efficient inflation targeting regime can increase central bank independence through an explicit target and a higher transparency of this monetary policy regime.

References

Alesina A., *Politics and Business cycles in Industrial Democracies*, Economic Policy 8, 1989.

Alesina A., Gatti R., *Independent Central Banks: Low Inflation at No Cost?* , American Economic Review 85, 1995.

Bade R., Parkin M., *Central Bank Laws and Monetary Policy,* Mimeo, University of western Ontario, 1988.

Bernanke B., Woodford M., *The inflation targeting debate,* National Bureau of Economic Research, The University of Chicago Press, 2006.

Calvo G., *On the time consistency of optimal policy in the monetary economy,* Econometrica 46(6), 1978.

Carson C., Enoch C., Dziobek C., *Statistical implications of Inflation Targeting – getting the right numbers and getting the numbers right,* International Monetary Fund, Washington D.C, 2002.

Cerna S., Donath L., Dima B., *Cetral bank independence in Romania,* Central banking in Eastern Europe, Routledge, 2004.

Crispin M., *Politique monétaire crédible, Le potentiel,* Supplément, Kinshasa, 2006.

Cukierman A., *Central Bank Strategy, Credibility and Independence – Theory and Evidence*, The MIT Press, 1992.

Cukierman A., Webb S.B., Neyapti B., *Measuring the Independence of Central Banks and Its Effects on Policy Outcomes*, The World Bank Economic Review 6, 1992.

Cukierman A., *Central bank independnece and monetary control,* The economic Journal 104, 1994.

Cukierman A., *The Economics of Central Banking,* Discussion Paper Center for Economic Research, No. 9631, 1996.

Debelle G., Fischer S., *How independent should a central bank be?* Federal Bank of Boston Conference Series no. 38, Boston: Federal Bank of Boston, 1994.

Eijffinger S., De Haan J., *The Political Economy of Central Bank Independence*, Special Papers in International Economics No. 19, Princeton, N.J., 1996.

Forder J., *On the measurement and assesment of institutional remedies,* Oxford Economic Papers 48, 1996.

Grilli V., Masciandaro D., Tabellini G., *Political and Monetary Institutions and Public Financial Policies in Industrialized Countries,* Economic Policy, 13, 1991.

Healey N., Harrison B. (collected papers), *Central Banking in Eastern Europe,* Routledge, 2004.

Healey N., Wiśniewski Z. (collected papers), *Central Banking in Transition Economies*, Toruń Business School, 1999.

Howitt P., *Money and growth, Monetary policy in developed economies: Handbook of Comparative economic policies,* Vol. 3, Westport, Greenwood Press, 1993.

Issing O., Artus P., Blinder A., Buiter W., Solow R., *Monetary policy in the new international environment – Central banks as economic institutions,* The Cournot Center for Economic Studies Series, Edward Elgar Publishing, Cornwall, UK, 2008.

Kydland F., Prescott E., *Rules Rather Than Discretion: The Inconsistency of Optimal Plans,* Journal of Political Economy 85 (3,June), 1977.

King M., *The politics of central bank independence,* Central banking, XI (3), February 2001.

King M., *The inflation target ten years on.* Speech delivered to the London School of Economics, London, England, 2002.

Loungani K.P., Sheets N., *Central Bank Independence, Inflation and Growth in Transition Economies,* Journal of Money, Credit and Banking 29, 1997.

Lohman S., *Optimal commitment in Monetary Policy: Credibility versus Flexibility,* American Economic Review 82, 1992.

Mishkin F., *Monetary policy strategy,* The MIT Press, 2007.

Neuman M., von Hagen J., *Does inflation targeting matter?* Federal Reserve Bank of St. Louis Review 84 (4), 2002.

Orléan A., *Monetary beliefs and the power of central banks,* Central banks as economic institutions, The Cournot Centre for Economic Studies Series, Edward Elgar 2008.

Pollard P., *A Look Inside Two Central Banks: the European Central Bank and the Federal Reserve,* Federal Reserve Bank of St. Louis, 2003.

Radzyner O., Riesinger S., *Central bank legislation and reality in Central and eastern Europe, Austria National Bank,* Focus on Transition I, 1997.

Rogoff K., *The Optimal Degree of Commitment to an Intermediate Monetary Target,* Quarterly Journal of Economics 100, 1985.

Wagner H., *Central Banking in Transition Countries,* IMF Working Paper 98, Washington D.C., 1998.

***, Law no. 101/1998 regarding the statue of NBR.

***, Law no. 312/2004 regarding the new statue of NBR.

***, Inflation reports 2005 – 2008, NBR.

Appendix A

Measuring central bank independence in Romania using Bade & Parkin (1988) index

Central bank is the highest monetary policy authority	No government members on the central bank council	Some members of the central bank council are appointed independent from the government	Degree of independence
*	*	*	
***			

Sum of Bade & Parkin index: 4 (***)

Appendix B

Measuring central bank independence in Romania using GMT political index

(P1) Governor *not* appointed by government 1

(P2) Governor appointed for 5 years 1

(P3) *All* the Board *not* appointed by government 1

(P4) Board appointed for 5 years 1

(P5) No mandatory participation of government representative in the Board 1

(P6) No government approval of monetary policy formulation is required 1

(P7) Statutory requirements that central bank pursues monetary stability

amongst its goals 1

(P8) Legal provisions that strengthen the central bank's position in

conflicts with the government are present 0

Overall index of GMT political independence : 7 points

Measuring central bank independence in Romania using GMT economic index

(E1) Direct credit facility: not automatic 1

(E2) Direct credit facility: market interest rate 1

(E3) Direct credit facility: temporary 1

(E4) Direct credit facility: limited amount 1

(E5) Central bank does not participate in pimary market for public debt 1

(E6) Discount rate set by central bank 1

(E7) Banking supervision not entrusted to the central bank (**) or not entrusted to the central bank alone (*) 0

Overall index of GMT economic independence : 6 points

Appendix D

Measuring central bank independence in Romania using Cukerman's LVAU index

The description of the variables	Numerical Code
1. *The chief executive officer (CEO)*	
(a) The term of office is five years – 5 ani	0.50
(b) Appointment by the Parliament	0.50
(c) Dismissal possible only for reasons not related to policy	0.83
(d) Cannot hold office in the government	1.00
2. *The monetary policy formulation*	
(a) The NBR decides alone the monetary policy	1.00
(b) The NBR is the final authority in case of conflict concerning the objectives defined in the statue	1.00
(c) The NBR has no active influence in the bugetary process	

	0.00

3. *Objectives*

Price stability is the fundamental objective of the NBR, and the colaboration with the public authority pursues the fulfilment of this objective	1.00

4. *Limitation of lending to the government*

(a) No legal limits for advances (limitations of non-securitized lending)	0.00
(b) Securitized lending – unlimited	0.00
(c) Terms of lending agreed between the NBR and the Ministry of Finance	0.33
(d) Only the central public authority can borrow from NBR	1.00
(e) The limits of government lending are defined by share in the capital (and reserve fund) of the NBR and by the budgetary revenues	0.67
(f) The maturity of the loans is maximum 90 days	1.00
(g) Interest rates are at market level	0.75
(h) The NBR cannot buy or sell state securities on the primary market	1.00

LVAU overall score: 0.66

Appendix E

Index of central bank independence and inflation targeting

1. *Central bank legal and political independence*

(a) Term of office of Governor (CEO)	
- 6 years or more	10 point
- 5 years	7 point
- 4 years	5 point
- 3 years or less	3 point
- Not mentioned	0 point
(b) Legal power to appoint the Governor (CEO)	
- Board of the central bank	10 point
- Legislature / Parliament	5 point
- Executives / Government	0 point
(c) Legal power to dismiss Governor (CEO)	
- Board of the central bank	10 point
- Legislature / Parliament	5 point
- Executives / Government	0 point
(d) Does Governor / CEO hold other office in the Government	
- No – Governor / CEO does not	10 point
- Yes – He does	0 point
(e) Turnover rate of Governor / CEO	
- TOR is 0.16 or smaller	10 point
- TOR is 0.2 or smaller	7 point
- TOR is 0.25 or smaller	5 point
- TOR is 0.33 or smaller	3 point
- TOR is above 0.33	0 point

(f) Political vulnerability of Governor / CEO

- Political (if the Governor changed with 6 months of political change) 0 point
- Non Political 10 point

(g) Members of the Management Board of the central bank

- No government persons 10 point
- Not mentioned government or non – government 7 point
- Government Employees 5 point
- Government Ministers 0 point

(h) Appointment of Board members

- Government appoints not more than half the members of the board, or two different bodies, which really balanced one another, respectively nominate and appoint the board members, for instance; the ministry of finance nominates and the legislature appoints 10 points
- Government appoints more than a half of all the members of the board 0 point

(i) Term of the Board Members

- The term is larger than 6 years and staggered 10 point
- The term is 5 years and staggered 7 point
- The term is 4 years and staggered 5 point
- The term is less than 4 years and staggered 3 point
- Not mentioned 0 point

Maximum score of legal and political central bank independence = *90* point

2. *Central bank governance and conduct of monetary policy*

(a) Price stability

- Is the main or only objective of the bank 10 point
- Price stability is one objective with other compatible objectives 7 point
- No objectives stated in the bank charter 5 point
- Stated objective do not include price stability 0 point

(b) Monetary policy strategy

- Inflation targeting and forecasting by central bank 10 point
- Not done by the central bank 0 point

(c) The degree of Goal and Target Independence

- The central bank alone sets the numerical goals or targets for its objectives, for instance: monetary aggregates, interest rates or inflation 10 point
- The central bank and the Government jointly set the goals or targets for its objectives, for instance through a policy target agreement 5 point
- The Government alone sets the targets for the objectives 0 point

(d) The degree of Instrument independence

- The central bank alone sets the instruments of monetary policy to achieve its objectives 10 point
- The central bank and the Government jointly set the instruments of monetary policy 5 point
- The Government alone decides on setting instruments 0 point

(e) General policy conflicts

- The central bank absolutely prevails over the Government in case of policy conflicts 10 point
- The Government prevails over the central bank, subject to due process and possible protest from latter 5 point
- The Government absolutely prevails over the central bank 0 point

(f) Interest rate

- Interest rate setting and managed by central bank 10 point
- Not done by the central bank 0 point

(g) Intervention of foreign exchange market is decided by

- Central bank 10 point
- Jointly with the Government 5 point
- Government 0 point

(h) Foreign exchange market regulation done by

- Central bank 10 point
- Jointly with the Government 5 point
- Government 0 point

(i) Foreign exchange borrowings are decided by

- Central bank 10 point
- Jointly with the Government 5 point
- Government 0 point

(j) Financial Supervision

- The banking supervision function is separated from the central bank and entrusted to an autonomous Government agency so that it will not impinge on monetary policy 10 point
- The banking supervision is jointly undertaken by the central bank and a separate Government agency 5 point
- The function of monetary policy and banking supervision is, combined in a single institution, the central bank 0 point

(k) Lending to the government

- Not permitted 10 point
- Permitted with strict limits (e.g. up to 15% of government revenue) 7 point
- Permitted, and the limits are loose (e.g. over 15% of government revenue) 5 point
- No legal limits on lending 0 point

(l) Terms of lending

- Controlled by the bank 10 point
- Specified by the bank charter 7 point
- Agreed between the central bank and Executive 5 point
- Decided by the executive branch alone 0 point

(m) Maturity of loans

- Within 6 months 10 point

- Within 1 year 7 point
- More than 1 year 5 point
- Not mentioned in the law 0 point

(n) Interest rates on loan must be

- At market rates or above minimum rate 10 point
- Below market rate 7 point
- Interest rate is not mentioned 5 point
- No interest on government borrowing 0 point

(o) Central bank's participation in the primary market for Government securities

- The central bank is prohibited from buying Government securities from the primary market or if not prohibited, central bank's activity in the primary market is discretionary voluntary 10 point
- The central bank is an active and involuntary buyer in the primary market for Government securities 0 point

Maximum score of central bank governance and conduct of monetary policy = 150 point

3. *Central bank transparency and accountability*

(a) Is a formal statement of the objective(s) of monetary policy with an explicit prioritization in case of multiple objectives

- One primary objective, or multiple objectives with explicit priority 10 point
- Multiple objective without prioritization 5 point
- No formal objective(s) 0 point

(b) Is there a quantification of the primary objective

- Yes 10 point
- No 0 point

(c) Are there explicit contracts in the similar institutional arrangements between the monetary authorities and the Government

- Central bank with explicit instrument independence or central bank contract, although possibly subject to an explicit override procedure 10 point
- Central bank without explicit instrument independence or contract 5 point
- No central bank contracts or other institutional arrangements 0 point

(d) Is the basic economic data relevant for the conduct of monetary policy publicy available: money supply, inflation, GDP, unemployment rate and capacity utilization

- Quarterly time series for all five variables 10 point
- Quarterly time series for three or four out of five variables 5 point
- Quarterly time series for at most two out of five variables 0 point

(e) Does the central bank disclose the macroeconomic model(s) it uses for policy analyses

- Yes 10 point
- No 0 point

(f) Does central bank regularly publish its own macroeconomic forecasts

- Quarterly numerical central bank forecasts for inflation and output for the medium term specify the assumptions about the policy instrument 10 point
- Numerical central bank forecasts for inflation and / or output published at less than quarterly frequency 5 point
- No numerical central bank forecasts for inflation and output 0 point

(g) Are decisions about adjustments to the main operating instrument or target promptly

- Yes on the day of implementation 10 point
- No, or only after the day of implementation 0 point

(h) Does the central bank provide an explanation when it announces policy decisions

- Yes, always and including forward looking assessments 10 point
- Yes, when policy decisions change or only superficially 5 point
- No 0 point

(i) Does the central bank disclose on explicit policy inclination after every policy meeting on an explicit indication or likely future policy acts at least quarterly

- Yes 10 point
- No 0 point

(j) Does the central bank regularly evaluate to what extent its main policy targets have been achieved

- Yes, accounting for significant deviations from target or perfect control over the main operating instrument / target 10 point
- Yes, but without providing explanations for significant deviations 5 point
- No, or not very often – at less than annual frequency 0 point

(k) Does the central bank regularly provide information on macroeconomic disturbances that affect the policy transmission process

- Yes, including a discussion of past forecasts errors 10 point
- Yes, but only through short – term forecasts or analysis of current macroeconomic developments 5 point
- No, or not very often 0 point

(l) Does the central bank regularly provide an evaluation of the outcome in light of macroeconomic objectives

- Yes, with an explicit account of the contribution of monetary policy in meeting the objectives 10 point
- Yes, but superficially 5 point
- No, or not very often 0 point

(m) Accountability of Governor / CEO

- Accountable to the Board 10 point
- Accountable to Parliament 5 point
- Accountable to Government 0 point

(n) Is the central bank activities audited

- Yes 10 point
- No 0 point

Maximum score of central bank transparency and accountability = 140 points

Maximum score of central bank independence and inflation targeting index = 380 point

Florin Cornel DUMITER, Assistant, PhD Candidate, Faculty of Economics, "Vasile Goldiş" Western University Arad, Romania. The main research fields are Monetary Economics and Public Finance, the main contributions being in:

- Dumiter Florin, (2007), `*Central bank independence and inflation'*, „Európai Integració – Elvek és Dőntések Gazdasági Fejlődés Európában, II Pannon Gazdaságtudományi Konferenica – Tanulmánykőtet II", ISBN 978 – 963 – 9696 – 30 - 3, pag. 339 – 351.
- Dumiter Florin, (2007), `*Central bank independence, disinflation, and the sacrifice ratio`*, „Competitiveness and European Integration – Finance, Cluj – Napoca, ISBN 978 – 606 – 504 – 014 – 4, pag. 250 – 256, 2007.