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*Central Bank Independence
in Transition Economies*

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Introduction

The newly established central banks in post-communist countries were provided with a considerable degree of legal independence. The reason for that was the empirical success of independent banks in developed countries in maintaining price stability. Theoretical support for independent central bank originates from the well known result on dynamic inconsistency of monetary policy (Kydland and Prescott 1977). Delegating monetary policy to “conservative” central banker reduces the inflationary bias in economy (Rogoff 1985). High and persistent inflation is one of the main problem faced by the transforming economies. Monetary expansion driven by political factors seems to be the main cause of current inflationary episodes. Institutional devices, such as an independent central bank, can impose necessary financial discipline on policymakers and restrict them from short-sighted monetary expansion. Of course, legal independence does not necessarily result in the actual independence i.e., effective protection from the political pressure. The legal provisions may be ineffective because observance of the law, the main public good in developed society, has been destroyed under the communist rule. The new institutions “transported in the suitcases of Western advisors into largely insolvent and administratively weak states” (Semler 1994) may not be able to withstand the political pressure of the transition period. Macroeconomic imbalances, credit-hungry governments and underdeveloped financial system produce an environment in which the CB independence is thoroughly tested. However, even in these circumstances, proper institutional settings are likely to reduce discretion in monetary policy and create sound foundation for political and economic transformation.

The aim of this paper is to examine the legal independence of the Central Banks and its influence on inflation in 10 Central European countries and former Soviet republics. The paper is organised as follows. First, possible motives for monetary expansion, its influence on inflation and the role of central bank in reducing inflationary bias are presented. The next chapter briefly describes previous empirical works on central bank independence and its impact on inflation. Then, various aspects of central bank independence in transition countries are presented and an overall index of independence is derived. Relations between independence and macroeconomic performance are examined next. Finally, I give some conclusions.

1. Central Bank Independence (CBI) in Economic Theory

This chapter presents theoretical basis for Central Bank Independence. The main conclusion from the theory is that greater CBI may reduce “inflationary bias” in the economy, i.e., persistent and higher than socially optimal price growth. For understanding the possible causes for the bias, first section demonstrates the benefits from unanticipated inflation produced by policymakers. Following Cukierman (1992)

four possible motives for monetary expansion are investigated: employment, revenue, balance of payment and financial stability motive. In the second section the basic monetary policy game model and the concept of time-inconsistency are introduced together with the recent theory of Political Monetary Cycles. Imperfect information and the credibility solution to the time-inconsistency problem are discussed in the third section. Various institutional solutions, which are crucial for understanding the role of CBI, are presented next. The Rogoff's (1985) argument for conservative Central Banker is examined in section four and the concept of the Walsh (1995) contract in section five.

1.1. Why Do Policymakers Like Inflation?

1.1.1. Phillips Curve and the Employment Motive for Monetary Expansion

In theoretical discussion the short-run relationship between inflation and deviations of unemployment from the natural rate, known as a Phillips curve, is a predominant motive for monetary expansion. The empirical relationship discovered by Phillips (1958), originally as a relation between wage inflation and unemployment in UK, was given numerous theoretical explanations which yield different implications for economic policy. Recently, the widely accepted “expectations augmented” Phillips curve is a relation between deviations of unemployment from its equilibrium level and unanticipated shocks to inflation. The relation may be derived either from the Lucas (1973) “surprise” supply function or the overlapping contracts models developed in Fischer (1977), Phelps and Taylor (1977) and Taylor (1979). The “surprise” supply function is based on three assumptions: expectations are rational, producers alter the amount to produce if they observe a change in prices of their products relative to the aggregate price level and producers do not have perfect information on the aggregate price level. In this setting the “rational expectations augmented” Phillips curve is vertical even in the short run and no systematic monetary policy can affect output (Sargent and Wallace 1975). In the overlapping contracts models prices or wages are set by multiperiod contracts. In each period only a fraction of all contracts is renewed. As a result, an adjustment to nominal shocks is gradual, even if agents expectations are rational. A monetary expansion has real effect and the Phillips curve relationship is exploitable even in the long-run.

1.1.2. Revenue Motive for Monetary Expansion

Another incentive for the Government to create surprise inflation is a revenue motive. Inflation depreciates the real value of money and allow the Government to collect seignorage revenue, defined as the amount of real resources bought by issuing new base money. The amount of seignorage depends on a tax base which, in this case, is formed by voluntary hold money. The amount of these money depends on inflationary expectations. Thus the seignorage revenue is higher if the inflation is surprise and people cannot optimise their asset holding. Inflation reduces also the

value of other nominally-denominated assets, including Government liabilities (Barro and Gordon 1983a). In particular, the inflationary surprise depreciates the interest bearing debt fixed in nominal terms and reduces Government's future real expenditures for interest and repayment of principal.

As long as it is not anticipated by the people, the seignorage is an unexpected capital levy. The Government imposes this tax once people have optimally decided what amount of real resources they want to hold. Thus the theoretical advantage of the seignorage over other form of taxation is that it is non-distorting, at least ex-ante (the distortions arises when people anticipate the imposition of the inflationary tax). In practice, the degree of reliance on the seignorage revenue seem to be determined not by the optimal taxation motives but mainly by the efficiency of the tax system. Thus the Government relies on the inflationary tax if other taxes are difficult to collect. The seignorage revenue is easily and immediately transferred to the Government if it is allowed to borrow directly from the Central Bank. Even if this privilege is restricted or prohibited by law, the legal protection does not have to be binding due to poor compliance with the law (Cukierman 1992, p. 47). This situation is particularly plausible in countries where the Government faces constraints on borrowing from private agents, e.g., when financial markets are too narrow. In this case “printing money” may be the only possible source of deficit financing.

The revenue motive may account for the hyperinflationary episodes which are impossible to explained by the employment motive. The higher money growth decreases tax base (through higher inflationary expectations) but increases tax rate. It can be shown (Cagan 1956) that the seignorage revenues initially rise with the monetary expansion, reach a maximum and then decrease. Empirical studies (Cagan 1956) indicate that in hyperinflationary episodes the money growth was excessive i.e., seignorage revenue was lower than could be if the money growth was decreased. Cagan (1956) explains this phenomena by lagging inflationary expectations of the private agents and strong positive time-preference of the policymakers. Barro (1983) presents another explanation, based on the time-inconsistency of optimal policy. He shows that the excessive money growth is possible if the Government places much greater weight to the seignorage revenue than to the inflation cost in its loss function.

1.1.3. Balance of Payment Motive for Devaluation

Another motive for inflationary policy is a concern about the balance of payment deficit. The relation between nominal devaluation and the balance of payment position is given in Cukierman (1992). The nominal devaluation may reduce real wages and, in the presence of nominal contracts, increases employment and output. Hence, more resources are available for export or for import substitution and the current account position improves. The higher output increases domestic consumption and import but, if the marginal propensity to consume is smaller than one, export grows more than import. However, the gains from the expansion are the short-term only. While the contracts are renegotiated, the economy returns to the equilibrium employment and output. In the rational expectations framework people know that the policymakers are tempted to reduce their wages. Consequently, private agents set higher nominal wages

to keep the real wages on the desired level. The resulting equilibrium will be analysed in section 2.

1.1.4. Financial Stability and Monetary Expansion

One of the Central Bank's main tasks in most of the countries is a stability of the financial system. Cukierman (1990, 1992) shows that this objective may be inconsistent with price stability and results in the inflationary bias. In his model the Central Bank cares about the price stability and, to assure stability of the financial system, about the profits of the banking sector. It may be shown (Cukierman 1990, sec. 3) that these profits decreases with the real rate on Government bonds¹. The Central Bank may temporary reduce this rate by increasing the monetary expansion and providing additional liquidity to the banking system. Thus there is a trade off between stability of the financial system and inflation. The Central Bank's concern for the banking sector stability results in excessive rate of monetary expansion and, consequently, higher inflation.

1.2. Models of Monetary Policy Games

1.2.1. Basic Model

Motives for monetary expansion described in the previous section turned out to be extremely important in the analysis of a dynamic inconsistency problem by Kydland and Prescott (1977). The dynamic inconsistency emerges when the decision optimal in the initial period is no longer optimal in the next period, even if no new information has appeared. This kind of problem may emerge where the optimal policy before private agents' contracts are set is different from the optimal policy afterwards. When the policymakers are ready to trade off more employment for higher inflation, they have incentive to inflate after the contracts have been set. Kydland and Prescott (1977) showed that, if agents expectations are rational, the resulting equilibrium is sub-optimal: unemployment is unchanged while inflation is higher. Because the results established in this and other policy games models are fundamental in analysis of the theoretical foundations of Central Bank independence this section is more detailed and begin with a description of the basic monetary policy game model, popularised by Barro and Gordon (1983a). The presentation is based on Cukierman (1992).

The first relation in the model is the “expectation augmented” Phillips curve:

$$u_t = \lambda(\pi_{et} - \pi_t) + u^* \quad \lambda > 0 \quad (1),$$

Where u_t is unemployment rate in period t , π_t is inflation rate, π_{et} is expected inflation and u^* is the natural rate. The relationship may be interpreted as a Lucas

¹ The higher rate prompts commercial banks to offer higher interest rates on deposits in order to collect more funds and invest in profitable bonds. General interest rate level increases. However, some of the banks' funds are already lent and pay lower rate of interest. In result, the banking sector's profits are lower.

“surprise” supply function or derived from the overlapping contracts model. In addition, in more realistic setting the random supply shocks may affect unemployment but, to keep the basic model as simple as possible, it will not be examined here. The effects of shocks and the optimal policymakers' responses are analysed in section four in the context of Rogoff's (1985) model.

Expectations are rational, i.e., $\pi_{et} = E\pi_t$ and private agents have the same information as policymakers about the state of the economy and about policymakers' objectives. The policymakers can perfectly control inflation and, in each period, minimise the social loss function:

$$Z_t = a(u_t - ku^*)^2 + (\pi_t)^2 \quad a > 0, 0 \leq k \leq 1 \quad (2)$$

The first term reflects costs of deviations from a target unemployment rate. If $k = 1$, the target rate is equal to the natural rate. If $k < 1$ the natural rate is higher than efficient because of unemployment compensation, income taxation or other distortions. The second term in equation (2) is a cost of deviations from optimal inflation rate, for simplicity normalised to be zero. The optimal inflation may be higher than zero, e.g., if the optimal taxation on money is positive.

In both the Phillips curve and the loss function unemployment rate and the natural rate of unemployment may be substituted by output and the natural level of output respectively. It will not change any result of the model.

By substituting the Phillips curve (1) into social loss function (2) we have:

$$Z_t = a(\lambda(\pi_t^e - \pi_t) + (1 - k)u^*)^2 + (\pi_t)^2 \quad (3)$$

The first order condition for a minimum of (3), taking π_t^e as given, produces the policy-makers' reaction function:

$$\pi_t^D = \frac{a\lambda(1 - k)u^*}{a\lambda^2 + 1} + \frac{a\lambda^2\pi_t^e}{a\lambda^2 + 1} \quad (4)$$

Private agents know policymakers' reaction function, so they can calculate the expected rate of inflation from it. Rationality requires that the expectation should reproduce itself through the equation (4), thus:

$$\pi_t^e = \pi_t^D = \pi_t = a\lambda(1 - k)u^* \quad (5)$$

The unemployment is at the natural rate since expected and actual inflation is equal.

The discretionary equilibrium is sub-optimal because excessive (positive) inflation does not “buy” any reduction in unemployment. The society would be better off if policymakers select zero inflation once-and-for-all but this rule does not have to

be credible. If the zero inflation commitment is not binding, people realise that policymakers can fool them by selecting higher inflation once the expectations have been set. Because expected loss from “cheating” is lower than from sticking to the rule, policymakers have always incentive to do so. Accordingly, people expect positive inflation rate. If policymakers select zero inflation in this case, the outcome is even worse than the discretionary equilibrium because the actual inflation rate is lower than expected and the rate of unemployment is higher than natural. Thus policymakers are forced to choose positive inflation rate.

The model is based on the employment motive for monetary expansion (policymakers care about inflation and employment in the loss function) but it can be easily extended to any other “temptation” described in sections 1.2-1.4. If the revenue motive is considered (Barro 1983), the value of the policymakers' loss function increases with the actual and expected inflation and decreases with the amount of seignorage. In this case, it is minimised subject to the function linking seignorage revenues with the money growth and inflationary expectations. If the Government values these revenue much more than the benefits from the low inflation, the rate of monetary expansion (and inflation) will be excessive. The seignorage revenue will be lower than could be if the money growth was decreased. This result is similar to the inflationary bias in case of the employment motive. Policymakers are not able to commit themselves to the optimal monetary expansion and have to inflate more than desired to achieve the policy goals.

Similar mechanism leads to the inflationary bias when the balance of payment motive is considered (Cukierman 1992). In this case the first element in the loss function is a (squared) deviation of the balance of payment from the desired level and the second element is a (squared) rate of inflation. It is assumed that the purchasing power parity holds and that the price level is solely determined by the nominal exchange rate. The model is slightly more complicated than previous ones since income effects of the devaluation are taken into account (namely the increase in income and change in value of government debt hold by private agents). However, the main conclusions are similar. If the government cannot precommit itself to the fixed exchange rate, people expect devaluation and the inflationary bias arises.

All results show the time inconsistency problem in the monetary policy. In the absence of credible precommitments, rule-based policy is optimal but time-inconsistent while discretionary policy is time-consistent but suboptimal. The monetary policy is subject to inflationary bias.

1.2.2. Political Monetary Cycles

The basic model of policy game can be given more political flavour by combining it with the hypothesis of political monetary cycle. In traditional business cycle models (Nordhaus 1975) policymakers, to be re-elected, use monetary expansion to stimulate output before the election. The main assumptions of this model are voters' “naivness” (voters are not rational in forming their expectations) and politicians' opportunism (their main or the only goal is re-election). In new monetary cycles models based on the game theory politicians are ideologically motivated and voters are rational. Alesina and Sachs (1988) propose a policy game model with two political

parties, left- and right-wing. The parties have different, politically motivated, preferences on desired level of economic aggregates reflected in their loss functions. Left-wing party picks more monetary expansion either because it prefers more employment (Alesina and Sachs 1988) or to alleviate the disincentive effects of its redistributive policy (Havrilesky 1987). Output is determined by the Phillips curve like in eq. 1. Nominal contracts signed by the private agents before the election reflect the uncertainty on its results. Thus the expected inflation depends positively on the probability that the left-wing party will win the election and on the discrepancy between parties' preferences. After the election both parties partially accommodate inflationary expectations. The right-wing party inflates more (left-wing less) than ideologically desired to avoid excessive fluctuations of output. Later in office they return to preferred monetary expansion. The output deviation from the natural level is negative (positive) under the right-wing (left-wing) administration in the first period after the election. The economic variables fluctuations are caused by political changes.

1.3. Reducing Inflationary Bias — Imperfect Information and Reputation

In subsequent works, originating from the basic model, various ways of reducing inflation without binding commitments are considered. Barro and Gordon (1983b) introduce a concept of reputation into the analysis, showing that the low inflation history can reduce inflationary bias in the economy. They consider a multiperiod extension of the model where policymakers announce a rule specifying a constant inflation rate and minimise the present value of the loss function. Under some arbitrary assumptions about formation of expectations, policymakers decide whether to inflate or not by comparing expected gains from breaking the rule with the expected present value of the loss from having higher inflationary expectations in the next period. Barro and Gordon (1983b) show that the resulting inflation rate is lower than in the discretionary equilibrium but higher than in case when binding precommitments are possible.

Backus and Driffill (1985)² extend the Barro and Gordon (1983b) model by introducing uncertainty about the policymakers' preferences. In their model there are two types of policy maker: a type 1 who cares about price stability only and a type 2 who is tempted to increase output. The reputation is the subjective probability that the policy maker is a type 1³. This probability is updated by a Bayesian rule as long as the policy maker behave as a type 1. It is profitable for type 2 to behave as type 1 to build up reputation and lower inflationary expectations. By breaking the commitment to price stability, type 2 reveals his “true nature” and loses reputation. If the policymakers' initial reputation is high enough and they optimise over a long horizon, there is some initial period in which the expected and actual inflation equals zero (which tends to infinity as the optimising horizon tends to infinity). It follows that the

² Similar model was developed by Barro (1985).

³ There is a pooling equilibrium in the model i.e., private agents cannot distinguish immediately the policy maker type. Vickers (1986) has developed the model with separating equilibrium i.e., where the type 1 successfully reveals its identity.

society can be better off by appointing a central banker with established anti-inflationary reputation and for a long term of office. Backus and Driffill (1985) conclude that “autonomous central banks (may) act as a precommitment device which may help to make noninflationary policies more credible and less costly.”

The Backus and Driffill analysis is extended by Cukierman and Meltzer (1986). In their framework policy objectives change gradually and monetary control is incomplete. Private agents do not know the current value of the weight in the objective function but draw inferences about it by observing monetary expansion in the previous periods. The optimal money growth in the model is higher the less effective is its control and the more biased are policymakers towards economic stimulation. The solution exhibits the familiar inflationary bias which increases with the average value of the weight in objective function. An important difference is that, because of asymmetric information, the discretionary solution may be superior to the binding zero rate of money growth rule. Another important finding is that it may be profitable for policymakers to increase the variance of the money growth control error. By choosing “the optimal degree of ambiguity” policymakers may affect the speed of learning about their shifting objectives and the average value of benefits from inflationary surprises. The model features an important trade-off between flexibility and credibility (Goodhart 1994). The more ambiguous is the monetary policy, the greater is a scope for surprise monetary actions but the less their credibility and greater mean inflation.

1.4. Reducing Inflationary Bias — Conservative Central Banker

1.4.1. Rogoff's (1985) Model

Another approach to the time consistency problem is presented by Rogoff (1985). He analyses a delegation of the monetary policy to the “conservative” Central Banker who attaches a greater weight to inflation stabilisation than the society. The structure of the Rogoff (1985) model is slightly more complicated than the Barro and Gordon (1983a) framework. The following presentation draws on Schaling (1995).

The society loss function is the same as in the basic model, i.e., given by equation (2). The Central Banker's loss function is as in equation (2) but with a lower weight placed on output stabilisation (second term in equation). In addition, the Phillips curve relationship is subject to productivity shocks which are normally distributed with zero mean. The sequence on the games is as follows. First, people set their inflationary expectations and sign nominal wages. Then the productivity shock realises. The Central Bank observe the shock and set monetary policy. At the last stage unemployment is determined. The inflation rate and unemployment are determined by the minimisation of the Central Bank loss function subject to the Phillips curve and private agents' expectations. If the Central Banker has the same preferences as the society, there is an inflationary bias like in the Barro and Gordon model. The expected inflation rate, however, is not equal to the actual inflation because Central Bank reacts to the productivity shocks which are not observable when people set their expectations. Expected output deviations from the natural level are zero and actual output deviations are less than the supply shock because of the stabilisation policy of the Bank.

Rogoff's analysis of the expected social loss function in this framework reveals that the Central Bank which is "conservative" may deliver lower mean and variance of inflation but higher variance of output than the Bank which share the same preferences as the society. Thus the society expects gains from low and stable inflation and losses from distorted responses to productivity shocks. There is a trade off between flexibility and credibility of the monetary policy adopted by the Bank. Rogoff shows that the optimal "conservatism", i.e., the weight attached to low inflation, should be large but finite⁴.

It is important to note that the Rogoff's analysis is based on the assumption that, after nominating the Central Banker, the Government has no influence on monetary policy. The Bank chooses both the goals (according to its preferences in the loss function) and the instruments (by setting the rate of monetary expansion) of the policy. These two prerogatives of the Bank are respectively the **goal independence** and the **instrument independence** (Fisher 1995).

A weak point of the Rogoff's model and the proceeding works is a postulate that the Government is able to choose the Banker whose preferences are common knowledge. The whole analysis hinges on the assumption that there is a continuum of potential Bankers' types, from which the Government chooses the most desired one whose type is immediately recognised by the private agents. The solution will be sub-optimal if the Government nominates the "wrong" person. If the people need time to recognise the Banker's type, the asymmetric information problem is re-introduced as in the models developed by Backus and Driffill (1986) or Cukierman and Meltzer (1986).

1.4.2. Alleviating the Credibility vs. Flexibility Trade Off

A serious drawback of the Rogoff's solution to the time-inconsistency problem is that the Central Bank's responses to the supply shocks are not optimal for output stabilisation. This problem give rise to several extensions of the proposed delegation scheme.

Flood and Isaard (1989) extended Rogoff (1985) model by specifying the rule for Central Bank's policy contingent on the value of the supply shock. In their model constant-inflation rule is followed in "normal" times but monetary expansion is positive when output shocks are large. Formally, the Central Bank's loss function is augmented by a positive constant, the cost of deviation from the rule, multiplied by a dummy variable which takes on the value of unity when renegeing and zero otherwise.

In the model presented by Lohmann (1992) policymakers grant only **partial independence** to the Central Bank by retaining an option to override Bank's decisions. However, there is a positive cost for the policymakers associated with the use of this "escape clause". This cost is a determines the Bank's independence. The Central Bank anticipates that the policymakers will override its decision if the sufficiently large output shock occurs. In effect the Bank follows a non-linear policy: the zero-inflation rule in "normal" times and, to avoid being overridden, more accommodative policy

⁴ Eijffinger et al (1995) derived a closed-form solution to the model, i.e., the optimal degree of conservativeness.

when shocks are large enough. Lohmann (1992) shows that this institutional setting dominates zero-inflation rule, full discretion and the Rogoff (1985) solution.

1.4.3. Credibility vs. Flexibility Trade Off and Political Monetary Cycles

Although so much theoretical work has been done to alleviate the credibility vs. flexibility trade off, empirical works on CBI does not support the Rogoff's hypothesis that the more independent Central Bank causes higher output variability. Alesina and Gatti (1995) show that in the political monetary cycles model more independent Central Bank may provide even lower variance of output than the social planner. The point is that the conservative Banker does not care enough about the stabilisation of the supply shocks but, instead, protects the economy from the politically induced cycles as in Alesina and Sachs (1988) model. In result the overall output variability may be lower.

1.4.4. Reducing Inflationary Bias — Optimal Contracts

Walsh (1995) proposed another solution to the time-inconsistency problem by adopting a principal-agent framework. He shows that an appropriate contract between policymakers and the Central Bank may provide an optimal policy in terms of inflation performance and stabilisation of the shocks. The model is based on the standard monetary policy game framework. The Phillips curve describes a relationship between deviations of output from its equilibrium level, unexpected inflation and aggregate supply shocks. The value of the supply shock is assumed to be a private information of the Central Banker. The Central Banker and the society share the same preferences described by the standard loss function. However, the utility of the Banker depends negatively on the value of the loss function and positively on the transfer he receives if the performance criteria set for him by the Government are satisfied. The game begins from designing the contract for the Central Bank. It is set in terms of a desired money growth, so the Bank has no informational advantage over the Government. The exact criteria are set by equating money growth computed by maximising the expected utility of the Bank with the rate of growth which is optimal response to the supply shocks. In the next stage people form expectations. Then the supply shock occurs. Finally, the Bank chooses the rate of money growth which, by construction of the contract, is optimal for the society. The trade off between credibility and flexibility disappears and the inflation is optimal to offset the supply shocks. However, McCallum (1995) argues that the Walsh solution does not solve the problem of time-inconsistency but merely reallocates it. The point is that the Government has exactly the same preferences as the Bank and the reinforcement of the contract is questionable.

2. Empirical Works on Central Bank Independence

Economic theory presented above emphasises the role of independent central bank in reducing inflationary bias. Empirical tests on this result require some judgement about unobservable central bank's independence. The first section of this chapter presents legal and behavioural indices of CBI. Early works concentrated on

legal aspects of independence, assuming that formal arrangements provide a reasonable proxy for an actual autonomy. Hence, legal indices of CBI are presented first. The actual independence may differ from that stipulated by law and behavioural indices, i.e., various measures of real CBI, are discussed next. Section two presents tests on the theory. Several works on the relationship between measures of CBI and inflation performance are discussed.

2.1. Indices of Central Bank Independence (CBI)

2.1.1. Indices of Legal CBI

Relevant elements of the central bank's law are aggregated into indices of legal independence by several researchers. Nearly all these papers are devoted to central banks in developed economies. First empirical work on CBI in twelve industrial countries was presented by Bade and Parkin (1988) (BP). They focus on three elements affecting CBI: the relationship between government and bank in the formulation of monetary policy, the procedure for appointing the board of the bank and the financial relations between the bank and the government. First two features characterise political independence (defined as the capacity to choose policy goals), the last one describes financial or budgetary independence. Political independence is assumed to be highest if the bank is the final policy authority, there is no government official in the board and more than half of the bank board members are appointed independently of the government. The smaller is the number of these attributes, the lower is political independence. The resulting index can take integer values from 1 (zero attributes) to 4 (all three attributes). Thus, equal weights are attached to all variables.

Alesina (1988, 1989) presents similar index of political independence, extending their sample to seventeen industrial economies. Numerical values of these two indices are identical for all countries in the BP sample, except for Italy which was given lower value.

Grilli, Masciandaro and Tabellini (1991) (GMT) focus on political and economic independence of the Central Bank. The political independence, defined as the capacity of the monetary authority to choose the final goal of policy, is influenced by three elements: relationship between government and bank in the formulation of monetary policy, the procedure for appointing the board and the formal goal of the bank with respect to monetary policy. These elements are operationalised by eight criteria: appointment procedure for the high officials of the bank (the governor and the board), length of their term in office, participation of the government representative in the board, government approval of monetary policy, legal provision strengthening the bank's position against the government in case of conflict and statutory obligations to maintaining price stability. GMT index of political independence is a sum of these equally weighted characteristics. Authors define economic independence as the capacity to choose the instruments of monetary policy. This aspect of independence is assumed to be affected by legal constraint on central bank's lending to the government and the location of the banking supervision. The bank is assumed to be more independent if the direct credit facility is of limited amount, not automatic, temporary

and at the market rate. In addition more independent bank sets the discount rate, does not participate in the primary market for public debt and is not engaged in commercial banks supervision. The last point requires more attention. The GMT argument against placing the banks supervision under the CB control is that the instruments such as portfolio constraints or ceiling to private bank loans may administratively increase the private demand for Government securities and facilitate deficit financing. According to GMT it “can weaken Central Bank independence by removing part of monetary control from the market”. Cukierman (1996) argues that placing the banking supervision under the CB authority makes the Bank more vulnerable to political pressure. In the presence of bank failures there is a high risk that bad debts will be monetised. Placing the supervision outside CB makes the costs of rescue operations more transparent. On the other hand, when supervision is under CB control, the Central Bank may use the precise information on the banking system to improve conducting of monetary policy. In addition, the personnel needed for supervision and conducting monetary policy seems to be complementary which is another argument for placing supervision under the CB control. Thus the use of this criterium in the GMT index is ambiguous

Eijffinger and Schaling (1993) (ES) critically examine and compare previous indices. They present their own index of political independence in twelve industrial countries, building on GMT but assessing together the relationship between the government and the bank and the formal goal of the monetary policy. The index is based on three criteria: assessment of the bank authority over monetary policy, presence of government officials in the board and procedure for board appointments. Double weight is attached to the first variable which contains evaluation of the bank authority against the government and the final goal of the monetary policy.

Cukierman (1992, ch. 19) and Cukierman, Webb and Neyapti (1992) build an index for nineteen industrial economies and forty-nine developing countries for four periods: 1950-59, 1960-71, 1972-79 and 1980-89. The index consists of four groups of variables covering position of the chief executive officer, policy formulation, central bank objectives and limitations on lending. There are sixteen legal variables which are given numerical values from 0 (lowest level of independence) to 1 (highest level of independence). Number of independence levels varies across variables depending on the precision of law. Variables are initially aggregated into eight legal variables (five concerning limitations on lending). Finally, eight variables are aggregated into a unweighted (LVAU) and weighted (LVAW) indices. These indices contains broader range of independence characteristics than the previous ones, although a substantial subjective judgement is involved in choosing the fineness of the variables characterisation, as well as selection of variables and weights in both stages of aggregation.

2.1.2. Behavioural Indices of CBI

Indices based on the legal status cover only one aspect of an overall independence. Central bank law cannot be complete in separating the authority between legislature, executive and the bank and even if it is explicit, it does not have to be binding in practice. Tradition or governor's personality may, among others,

significantly influence central bank behaviour. Cukierman (1992) and Cukierman et al. (1992) propose two “behavioural” indices of independence. First one is based on an average turnover of the governor in 1950-89. It is argued that, below some threshold, shorter term in office disables the governor to implement long-run policy and thus makes him more susceptible to political pressure and less independent. This index has two drawbacks. It may be argued that the subservient governor can stay in office longer than the one who follows his own, independent policy. Secondly, the index does not capture the “conservative bias” of the bank, i.e., its independence in pursuing the objective of price stability. Despite of these drawbacks the turnover rate seems to be a good measure of independence for developing countries, where the general adherence to the law is weaker than in Western democracies. This tentative conclusion is supported by the fact that the turnover rate in developing countries is much higher and more variable than in developed economies.

Another “behavioural” index presented by Cukierman (1992) and Cukierman et al (1992) is based on questionnaire sent to the central banks' staff. The questionnaire contains questions on legal aspects of independence, actual practice where it differs from that codified by law, monetary policy objectives, targets and instruments. Correlation between legal and questionnaire-based indices of CBI is low, indicating that these two measures reflect different dimensions of independence. However, the correlation is significantly higher for a group of developed countries where the compliance with the law is higher.

Cukierman and Webb (1995) build an index based on political vulnerability of the central bank governor. They find that the average propensity to replace the governor is significantly higher after political transition than in other periods. The cut-off between “political” and “non-political” period is six months. Vulnerability within this period is three times higher in developing countries than in developed economies and can be interpreted as another “behavioural” index of independence.

2.2. CBI and Inflation Performance

Legal and behavioural indices described in the previous section have been used extensively to test the relationship between CBI and inflation performance suggested by the theory. The relationship between CBI and real growth and its variability has been also investigated but since the main topic of the paper is the relation between CBI and inflation performance the results will not be presented here. It is worth to note, however, that none of the studies find convincing support for negative output _ CBI or positive output variance _ CBI relationship.

Bade and Parkin (1988) find negative association between their index of political independence and average inflation in the sample of twelve industrial countries for 1972-1986 period. Mean inflation delivered by two most (politically) independent banks (Switzerland and Germany) is significantly lower than in other countries. They do not find any significant relationship between inflation variability and political independence. The inverse relationship between the CBI index and average rate of inflation in 1973-86 was also found by Alesina (1988, 1989).

Grilli, Masciandaro and Tabellini (1991) support previous results. In the regression analysis they find negative relationship between average inflation and CBI, as well as between inflation variability and CBI measured by GMT index.

Alesina and Summers (1993) present an index of CBI which is the average of Alesina and GMT indices. By plotting this index against the inflation mean and inflation variability in 1955-88 period, they detect inverse relationship between CBI and inflation performance (average rate and variability).

Cukierman (1992) and Cukierman et al (1992) test various hypothesis on the relationship between inflation performance and CBI. They regress the depreciation in the real value of money (defined as $p/(1+p)$, where p is inflation rate) on the their disaggregated measures⁵ of legal independence and governor's turnover rate (for the sample of seventy countries over four periods). In the whole sample (developed and developing countries pooled together) the overall contribution of legal variables is insignificant. The overall contribution of the legal variables is significant at the 0.22 level in the sub-sample of developed countries and insignificant for developing countries. The governor's turnover rate is significant in the whole sample and in the sub-sample of developing countries but insignificant in the sub-sample of developed economies. This outcome confirms that the "behavioural" characteristics are better measures of CBI for developing countries and reveals significant relationship between CBI and inflation in this group. The results weakly support the presumption that the legal aspects of CBI affect inflation in developed countries. The regression of the depreciation in the real value of money on the aggregated index of legal independence (LVAU) and on the variable measuring the compliance to the law (ratio of the actual average term in office to the legal term in office) support these conclusions. The legal index is significant and compliance variable is insignificant in the sub-sample of developed countries. The opposite is true for developing countries. In another regression the questionnaire based measures of independence are related to the depreciation in the real value of money. They are significant (at least at 0.10 level), entering disaggregated or aggregated. The turnover rate added to this regression is also significant, indicating that this two measures account for different dimensions of independence.

Eijffinger et al. (1997) check the sensitivity of the relationship between CBI and inflation to the use of different indices of independence. They regress average inflation rate and variance of inflation separately on Alesina, GMT, ES and Cukierman's LVAU indices. The regression is done on the sample of twenty industrial countries over the period 1972-92 and two sub-periods (1972-82 and 1983-92). Measures of CBI are significant in all regressions for average inflation rate and in some regressions for inflation variability. Because the coefficients in these regressions are not easy to interpret, Eijffinger et al. (1997) estimate relationships between the log of inflation and the log of CBI indices. Estimated elasticity of inflation to CBI is significant in most cases and varies from -0.4 (LVAU index) to -0.7 (Alesina index) for the whole period. The estimation results give strong support to the inverse relationship between CBI and the average inflation and some support to the negative relationship between CBI and inflation variability.

⁵ i.e., initially aggregated into eight legal variables (see description above).

Wyatt (1997) criticises previous works on inflation and CBI for being *ad hoc* and proposes new method of investigation based on isotonic regression. He claims that the regression results presented so far are sensitive to the numerical values of the indices and one cannot be sure if the index captures a relevant distance metric correctly. What really matters is the ordering of the CBI and inflation and the hypothesis about this ordering can be tested within the isotonic regression framework. Wyatt (1997) uses GMT indices of political and economic independence in his analysis. Results confirm the theoretical relationship for both economic and political measures of central bank independence.

3. Central Banks in Transition Economies

This chapter provides an analysis of the legal CBI in transition economies and its influence on inflation performance. The first section presents the history and specific features of the Central Banking in post communist countries. Next section describes previous studies on CBI in Central Europe and the former Soviet Union. Indices of political and economic independence based on GMT methodology are derived next. The relation between CBI and overall transformation progress are presented in section 4. Then the possible determinants of the Banks' independence are analysed. In the next section some comparisons of the inflationary performance in the countries under investigation are offered. The relationship between inflation and CBI is examined in the next two sections. Finally, some conclusions are given.

3.1. Specific Features of Transition Economies

Economic reforms in post-socialist countries required deep institutional reform of the existing banking system. Pre-transformation system was based on the monobank, the central institution responsible for administering transaction and issuing cash and credit in centrally planned economy. Market reforms required creation of the two-tier banking system and separating Central Bank from commercial banking activity. In most of the countries the establishment of the Central Banks took place at the beginning of the transformation. New law granted a substantial statutory independence from other state's institution to the established or re-established Banks. The new statutes were based on the charters of the most independent Western Banks. The most important question in this research is whether the high degree of independence resulted in a downward pressure on inflation in transition economies. Two problems arise: how the economic theory presented in the first chapter fits to transition economies and how legal provisions are effective in practice.

The main theoretical determinant of the inflationary bias, namely the employment motive for monetary expansion, seems to have only limited influence in transition environment. The high or very high inflation significantly reduces the length of nominal contracts and brings various mechanisms of indexation. The dominant factor of persistent inflation in post communist countries is certainly the revenue motive. Severe fiscal imbalances and narrow financial markets inevitably lead to the monetary deficit financing. Another important source of inflationary pressure is the

balance of payment motive. Political pressure of well-organised lobbies on “competitive devaluation” is very strong in many transition economies. Stability of the financial system seems to play an important role as well, but the precise mechanism of this relation is not well examined. In some transition countries (e.g., Bulgaria) Government securities are the main source of financial sector's profits. The high yield on these papers protect commercial banks from losses caused by the large amount of bad loans in their portfolios. Thus the theoretical model presented in section 1.4 is not applicable in this case and the problem requires further investigation. Generally, well documented theoretical determinants of inflationary bias operate in the transition countries and the Rogoff's solution to the excessive inflation problem, delegation of the monetary authority, should perform well in post communist economies.

Instead of high degree of legal independence, several features of the transition economies might affect central bank behaviour and distort the influence of legal independence on inflation performance (Cukierman 1996):

- Initial stage of the economic transformation was characterised by severe macroeconomic imbalances. Price liberalisation and initial devaluation of the currency produced substantial shocks to the economy and need for monetary accommodation of these shocks.
- Inefficient “welfare state”, loss-making state-owned enterprises and tax base erosion produced substantial pressure on the States' budgets. In the presence of narrow domestic financial markets and limited access to foreign financial markets (due to high indebtedness), the emerging deficits could only be financed by the Central Banks. Thus, inability to balance the budget in some transition economies resulted in high inflation in spite of legal CBI.
- Banking systems in transition economies inherited considerable amount of non-performing loans. Newly developed private financial institutions were fragile and unstable. The Central Banks, usually legally responsible for financial stability, were forced to bail out insolvent banks in order to avoid financial crisis. The price for the rescue operations was additional monetary expansion.
- The norm of general adherence to the law has been destroyed under the communist rule (Triska 1994). In the presence of shocks described above, there is a temptation to bend the law. Thus, the legal provisions may be insufficient to protect CBI from the political pressure.

Nevertheless, it may be argued that the tremendous pressure exerted on Central Banks in transition environment makes the appropriate legal framework even more important for sound Bank's operations than in developed countries.

3.2. Previous Works on CBI in Transition Countries

Although the problem of CBI in transition economies seems to be an interesting research area, there were only few attempts to examine this topic so far. Because of the limited access to previous results⁶, I will discuss only two works in details.

⁶ Cukierman (1992) gives references to various papers presented on the conference on the *Constitutional Status of Central Banks in Eastern Europe* and to Hinton-Braaten (1994) where

Eijffinger and Van Keulen (1995) presents indices of political independence for eleven countries⁷, including the new legislation of Czech Republic, Hungary and Poland. Several indices of political independence are investigated, based on BD (Bade and Parkin 1988), Alesina (1989), GMT (Grilli, Masciandaro and Tabellini 1991) and EF (Eijffinger and Schaling 1993) methodology presented in chapter II. Czech National Bank is placed on the top of the independence ranking according to all indices. Poland is ranked third according to BD and Alesina indices, sixth applying GMT methodology and seventh using ES index. Hungary is ranked much lower according to all indices (on eighth to ninth position). Next, Eijffinger and Van Keulen analyse the relationship between inflation performance and various measures of independence. They do not find any positive correlation between these two variables in the sample of eleven countries. However, the results must be taken with caution because the group of countries under investigation is extremely diversified and authors do not control for significant differences between countries in the regression. Moreover, the number of degrees of freedom is low and the choice of inflation data seems to be incorrect for transition economies. For Poland the data start in 1988, before the law on CB was adopted. The inflation rate in Hungary is measured by 1992 inflation only. Thus the analysis provide no sensible results on the relationship between CBI and inflation performance in Central European countries.

Radzymer and Riesinger (1997) presents an extensive review of Central Bank legal independence in five Central European countries (Czech and Slovak Republics, Hungary, Poland and Slovenia), taking the standards developed in the Maastricht treaty as a benchmark. The elements of the Banks' law are classified into four groups: principal objectives, independence in formulation monetary policy, limits on lending to the public sector and status of the Governor. Authors find that Central Bank laws in analysed countries generally meet strict Maastricht criteria, although limitations on lending to the Government should be strengthen. However, it is stressed that the actual practice vary from the rules stipulated by law. An important problem is a political pressure on Banks and the practice of overruling the Banks' law by the Parliament. The turnover rate of Governors, proxy for political influence proposed by Cukierman (1992), was highest in Poland⁸ and Hungary and very low in the Czech Republic and in the Slovak Republic. In Poland the Parliament regularly suspends the limits on the CB credit to the Government and the same situation occurred in Hungary in 1994. Despite differences between the legal and the actual independence, Radzymer and Riesinger (1997) conclude that the there is a tendency towards strengthening of the

systematic description of the CB laws in transition economies was presented. Radzymer and Riesinger (1997) give further references to Hochreiter (1994) and Hochreiter and Riesinger (1995) (overviews of the Central Bank legislation in transition economies), to Sundararajan et al. (1997) (description of the Central Banking reforms in former Soviet Union) and to Siklos (1994) (indices of legal independence and examination of the relation between CBI and inflation performance for the Czech Republic, Hungary, Poland and Slovak Republic).

⁷ Austria, Denmark, Finland, Hungary, Luxemburg, New Zealand, Norway, Poland, Portugal, Spain and Czech Republic.

⁸ The turnover was high before the amendment to the law in February 1992 was adopted (see below).

CBI in countries under investigation. It should result in more credible monetary policy and is crucial in view of future EU membership.

3.3. Indices of Legal Independence

An assessment of legal provisions for CBI has twofold purpose. The CBI is a proxy for actual independence and, by relating it to the inflation performance, one can empirically test the predictions of the monetary policy games' theory in a group of transition countries. Furthermore, the question of great practical importance is how institutional settings affect monetary policy and inflation in post-communist economies.

The sample covers fourteen countries: six former Soviet republics (Belarus, Georgia, Kyrgyzstan, Latvia, Russia and Ukraine) and eight Central European countries (Bulgaria, Croatia, Czech Republic, Hungary, Poland, Romania, Slovak Republic and Slovenia). This choice was dictated either by the data availability (Bank's laws) or institutional settings (Estonia and Lithuania adopted currency boards thus their ability to conduct monetary policy is limited). The main legal characteristics of the Central Banks in these economies, with some additional information on the adherence to the law in practice, are presented in the appendix. The information on political and economic independence, defined as in GMT (1991), are summarised in **Tables 1** and **2** and aggregated into two indices respectively⁹. The structure of indices is similar to GMT but there are few important differences. Firstly, I use different criteria for evaluation of the Governor's appointment procedure. The nomination from the President is given two asterisks, from the Parliament one asterisk and from the Government none. It takes into account the characteristic feature of less advanced transition economies, namely the populism and the anti-reformatory stance of some Parliaments. I also assume that the bank is more politically independent if the provisions for dismissal of governing body's member, as stated in the law, are non-political only (like, e.g., loss of ability to perform his duties or sentence for a criminal act). Consequently the new variable is added to the political index. The political pressure on the Bank's management is more likely to be influential if the members of the governing body can be easily removed from their office. In addition, in the political index the parliament or government approval of monetary policy is regarded as a limitation to CBI (instead of the government approval only as in GMT). In the index of economic independence the CBI is higher if the Bank charges market or basic interest rate on its credit to the government (in GMT only the market rate). Although this provision makes the Bank more prone to the Government financial needs, it is surely better than no limitation on the interest rate at all.

⁹ I have not used the Cukierman (1992) methodology since, although much more precise in selecting the relevant elements of the law, the Cukierman index involves a substantial subjective judgement in choosing the weights' structure. The GMT index is less subjective and much more transparent. Secondly, the overall index does not allow for an inference based on the partial order within the group. The definitions of the simple and partial orders are given in the next section.

3.3.1. Political Independence

In all countries the law on Central Banks was passed recently, usually at the start of economic reforms. In most cases it was formulated according to the international standards and contain at least the most important provisions for political independence. In most of the countries the Governor is appointed for more than five years. Usually there is no formal influence of the Government on the Bank policy, although none of the statutes provide a legal provision supporting the Bank in case of conflict with the Government. The goal of maintaining the price stability is enumerated in almost all statutes (with exception of Belarus and Ukraine).

Table 1

GMT index of political independence for transition economies (1996)

	G1	G2	B3	B4	B5	R6	R7	C8	C9	Index
Belarus	*	*	*			*				4
Bulgaria	*		*			*	*	*		5
Croatia	*	*	*	*		*	*	*		7
Czech Republic	**	*	*	*	*	*	*	*		9
Georgia	**	*	*	*		*		*		7
Hungary		*			*		*	*		4
Kyrgyzstan	**				*			*		4
Latvia	*	*	*	*	*		*	*		7
Poland ¹⁰	**	*	*		*	*		*		7
Romania		*		*		*	*	*		5
Russia	**		*		*			*	*	6
Slovak Republic		*		*	*	*	*	*		6
Slovenia	**	*	*	*		*	*	*		8
Ukraine	*		*			*				3

Source: See Appendix

Notes:

G1: Governor not appointed by the government (*) and not appointed by the Parliament only (**)

G2: Governor appointed for more than 5 years

B3: none of the Board appointed by the government

B4: Board appointed for more than 5 years

B5: Provisions for Governor's dismissal non-political only

R6: no mandatory government representative in the Board

R7: government/parliament approval of monetary policy is not required

C8: statutory responsibility to pursue monetary stability

C9: presence of legal provision supporting Bank in conflicts with the government

The index of political independence, to avoid arbitrariness, is a sum of the elements in the table. Croatia, Czech Republic, Latvia and Slovenia have the most

¹⁰ In Eijffinger and van Keulen (1995) the "G1" variable for Poland (Governor not appointed by the government) was given no asterisk.

(politically) independent Central Bank while Belarus, Hungary, Kyrgystan and Ukraine the least independent.

3.3.2. Index of Economic Independence

Table 2

GMT index of economic independence for transition economies (1996)

	D1	D2	D3	D4	D5	M6	M7	Index
Belarus	*		*			*		3
Bulgaria	*		*	*		*		4
Croatia	*		*	*		*		4
Czech Rep. ^a	*	*	*	*		*		5
Georgia	*	*	*	*		*		5
Hungary	*	*		*		*	*	5
Kyrgystan	*		*	*	*	*		5
Latvia	*		*	*		*		4
Poland ^a	*	*	*	*		*		5
Romania	*			*		*		3
Russia ^b	*			*		*		3
Slovak Rep. ^a	*	*	*	*		*	*	6
Slovenia	*		*	*		*		4
Ukraine	*					*		2

Source: See Appendix

Notes:

D1: direct credit facility is not automatic

D2: direct credit facility is at the market interest rate (or at the basic CB rate)

D3: direct credit facility is temporary

D4: direct credit facility is of limited amount

D5: bank does not participate in the primary market for public debt

M6: the discount rate is set by the central bank

M7: supervision of commercial banks is not entrusted to the central bank (**)
or not entrusted to the central bank alone (*)

^a Direct credit to the Government is not permitted by the CB law

^b The Bank of Russia is not allowed to grant credit to cover budget deficit except cases when such financing is stipulated in the budget law (see appendix). Thus, this provision sets the limit on the Government borrowing (specified in the budget law) and makes it non-automatic (i.e., the Government does not decide on its borrowing from the Bank).

Although maintaining price stability is the main goal of most of the Banks, this is only rarely backed by precise regulations, crucial for establishing the actual Bank's independence. In particular, the provisions for economic independence of the Bank are much more diversified than in case of the political independence. The political consensus on imposing the limits on the Government borrowing from the Bank is probably much more difficult to attain. Only two statutes (Georgia and Hungary) specifies that the interest rate on the credit to the Government should be determined by the basic CB rate. In only one country (Kyrgystan) the Bank is prohibited from purchasing Government securities on the primary market. The limitations on the

amount of credit to the Government, one of the most important element of economic independence, also vary considerably from very strict as in case of Czech and Slovak Republic to almost non-existing as in Belarus and Ukraine (the exact comparison is very difficult because of different basis set for the limits).

In the discussion on GMT index in chapter 2 several arguments are presented for and against placing the banking supervision in the structure of the Central Bank. In the sample under investigation only two countries (Hungary and Slovak Republic) have the banking supervision outside the Central Bank. Thus the supervision seems to be perceived as a traditional role of the Central Bank. It is interesting to note that in the conflict between the Governor of the National Bank of Poland and the Minister of Finance in 1994 the Governor strongly opposed delegating the banking supervision to the external body. Nevertheless, I follow GMT in identifying the Banks not engaged in the supervisory activity as more independent. The main argument for that is a political pressure on the Bank to conduct large scale rescue operations which may undermine other policy goals.

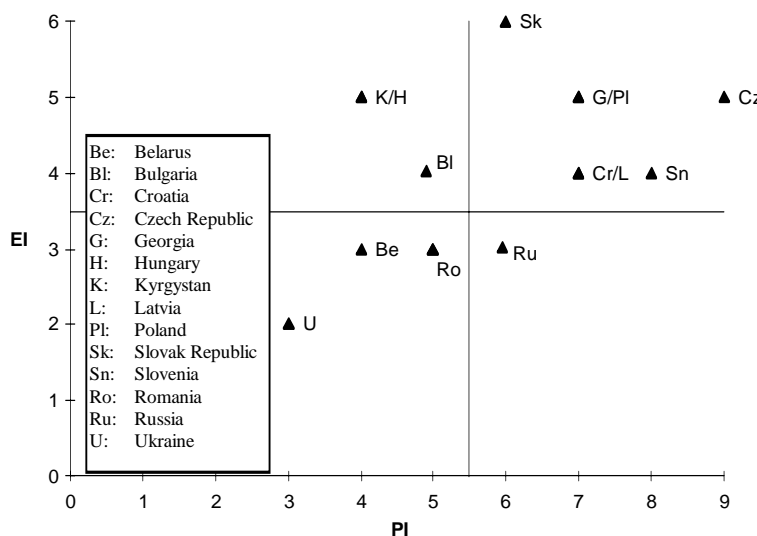
The sum of the elements in the table gives the index of economic independence. The most (economically) independent Central Bank is in Slovak Republic, the least independent are Banks in Belarus, Ukraine, Romania and Russia.

3.4. Overall Independence and Determinants of CBI

Figure 1 plots the political and economic indices. The group of countries where the CBI is relatively high (upper-right quarter) consists of Croatia, Czech and Slovak Republic, Georgia, Lithuania, Poland and Slovenia. Less independent Banks are in former Soviet Union countries (Belarus, Kyrgystan, Russia and Ukraine), in Bulgaria, Hungary, Romania.

Figure 1

Indices of Political (PI) and Economic (EI) Independence



Source: As Tables 1 and 2

Having described the basic elements of legal independence, it is worth to enumerate possible determinants of CBI in transition economies. Theoretical hypothesis, among other factors, stress the role of collective memories of past inflation, need for international sources of finance and the width of financial markets in determining the CBI (Cukierman 1996).

The first factor seems to explain well the current state of legal CBI, especially in less advanced transition countries where the legal independence was the lowest in the sample. In Georgia, Kyrgystan and Russia the laws have been currently updated and the changes were clearly related to hyperinflationary episodes in the recent past. The similar situation emerged in Macedonia and Albania^{11,12}. Works on new statutes are carried on in Ukraine (where the inflation rates were among highest in the sample) and in Romania. These evidences support the idea that the relation between CBI and inflation performance reflects the underlying aversion to inflation in the society. It is important to note that the institutional changes take place **after** the inflation has been reduced¹³. The society institutionalises the anti-inflationary consensus and delegates the authority to protect it to the independent Bank. It must be stressed that the CBI could not be an alternative for orthodox or heterodox stabilisation programs implemented at the initial stage of the transformation process. Although there is no theoretical explanation of this phenomenon, the CBI seems to function well as a preventive but not as a remedial devise (Cukierman 1996). Cukierman (1996) presents historical example of the Reichsbank during hyperinflation in mid 1922. Independence from the government, augmented by increasing the fraction of non government members in the Board, resulted in different distribution of the seignorage revenues but not in lower inflation. Recent experience of Croatia supports this view. The formal CB independence did not prevent this country from having very high inflation rate in 1990-93. The inflation has been reduced after introduction of the exchange rate stabilisation programme at the end of 1993. From then on, the independence seems to be an efficient device for protecting price stability¹⁴.

Second factor, need for foreign financial sources, seems to be highly important determinant of CBI in all countries. Less advanced countries, often dependent on the foreign aid like e.g., Georgia, have been pushed by the international institutions to adopt the law based on the Western standards. The “foreign” determinant of independence is also important in countries where the transformation began earlier. In Hungary and, to less extent, in Poland the law seems to be slightly “outdated” comparing to the provisions adopted in other economies advanced in transition. At the

¹¹ The Central Banks' laws in Macedonia and Albania are not analysed in details because no information were available on the legal situation before 1996.

¹² Inflation rate in Albania was, however, much lower than in other transition countries. The highest recorded annual rate was 226% in 1992.

¹³ The counterexample is given by Bulgaria, where the adopted currency board arrangement is an example of a “remedial”, rather than protective, institutional device.

¹⁴ Currently, the monetary policy conducted by the National Bank of Croatia is based on the informal currency board arrangements. The only significant source of money creation is an increase in foreign reserves, which constituted 97.3% of the total Central Bank assets in mid 1996. However, it must be stressed that this is not a formal rule but an independent policy of the Bank.

start of the transformation the political consensus on the role of the Bank in managing the monetary policy was lower. New, market environment was not fully accepted and there was a substantial pressure on the Bank to act as the Government's fiscal agent. Consequently, the degree of independence was lower than, e.g., in Czech and Slovak Republic. Currently, the Bank's law in Hungary has been substantially amended. In Poland, the new Constitutional Law prohibits the Government's borrowing from the Central Bank. Although the new laws are helpful in establishing the credibility on the international markets, the crucial determinant of the amendments is a necessity for harmonisation of the law with European standards. Integration with the European Union and, probably in the next step, entering the European Monetary System requires adopting the strict Maastricht criteria for CBI.

The third factor influencing the Bank independence, the width of financial markets, seems to be also important in establishing CBI. The high degree of independence in "advanced" countries would be impossible without the substantial financial markets' development (see **Table 3**). The prohibition of financing the budget deficit by the Central Bank credit would be hardly possible if the Governments were not able to borrow on the well organised financial markets. Difficulties with financing the deficit seem to be the main obstacle in building the independence in former Soviet Republics and less advanced Central European countries.

3.5. Inflation Performance

Although the substantial economic changes took place in all fourteen countries, there are considerable differences in the progress of reforms. The degree of macroeconomic stabilisation, which is a precondition for transformation, is reflected in the inflation performance. The annual changes in consumer prices (end-year) are presented in **Figures 2** and **3**. Countries are divided into two broad groups: with low (or moderate) inflationary history (Croatia, Czech Republic, Hungary, Poland, Slovak Republic and Slovenia) and high inflationary history (Belarus, Bulgaria, Georgia, Kyrgystan, Romania, Russia and Ukraine).

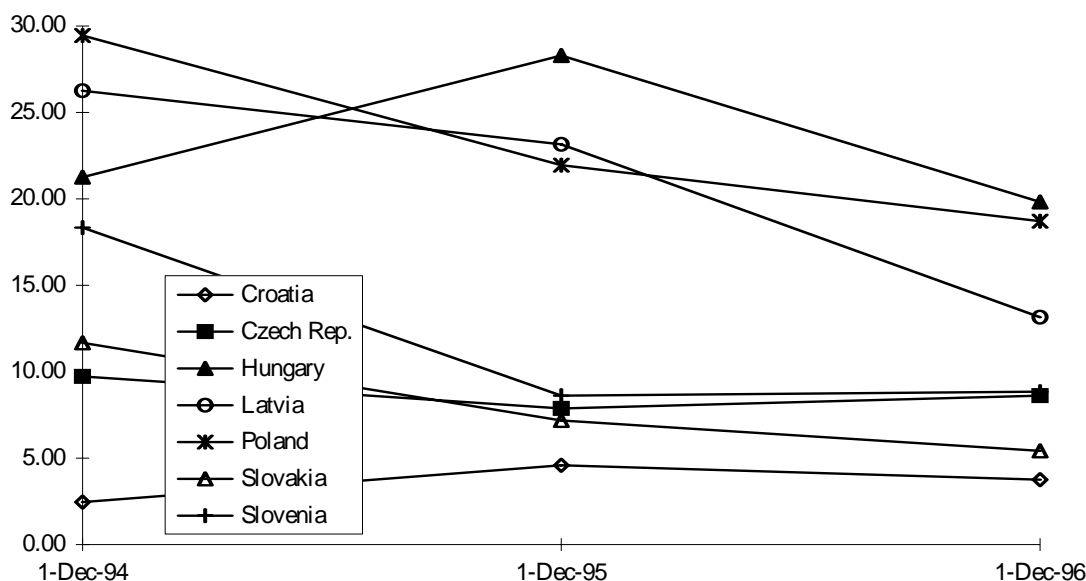
Countries in the first group (**Fig. 2**), which managed to keep inflation under control from the beginning of the transformation, may be further divided into two subgroups. In Slovenia, Czech and Slovak Republics the inflation rate was stable (constant or moderately decreasing) and fell in the range of 5-15% at the end of 1996. Croatia, also included in this subgroup, experienced the high initial inflation and very fast and sustainable stabilisation. In Hungary, Latvia and Poland the price growth was higher (15-25% at the end of 1996) and less stable, although decreasing in Latvia and Poland.

The inflationary performance in the second group (**Fig. 3** — Belarus, Bulgaria, Kyrgystan, Romania, Russia, Ukraine) reflects a history of their several stabilisation attempts. The most recent stabilisation in Ukraine and Russia seems to be successful so far and initial near-hyperinflations have been significantly reduced. Reduction was even more dramatic in Georgia. Disinflation in Belarus seems to be also significant, although in assessing inflationary performance one must be taken into account the widespread price control and doubtful statistics. Kyrgystan, after the initial drop, has a

persistent inflation at about 30%. In Bulgaria and Romania stabilisation programs are more difficult and the high inflation re-emerged recently¹⁵.

Figure 2

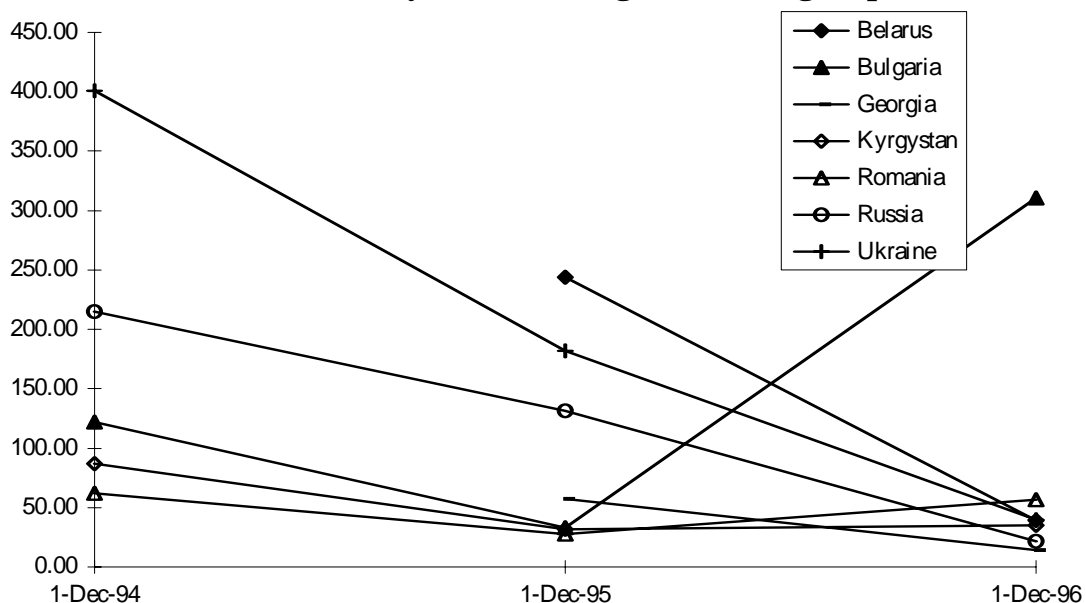
Annual inflation rates (end-year) in the low and moderate inflation group



Source: IMF IFS

Figure 3

Annual inflation rates (end-year) in the high-inflation group



Source: IMF IFS, AECD Monthly Business Survey (Bulgaria), Georgian Economic Trends, National Bank of Kyrgystan

¹⁵ In 1997 both countries managed to stabilise the price level (Bulgaria adopted the currency board arrangement)

3.6. CBI and Inflation Performance

3.6.1. Measures of Inflation

Although the countries in this group vary considerably in the progress of transformation process it may be argued that all of them faced similar shocks related to economic reforms. Thus it is reasonable to assume that the differences in their macroeconomic performance may be, to some extent, explained by institutional settings such as the CB legal independence. However, the time horizon chosen to the analysis is inevitably short. In 1996 all countries were in the transformation process since at least two years but the macroeconomic imbalances “inherited” from the previous system and the transformation shocks had considerable effects on economies where the stabilisation and market reforms began later. In case of transformation countries it is impossible to assess the long-run relationship between independence and the mean inflation discussed in the CBI theory. Differences in inflation performance over the volatile, three years period can not provide any decisive conclusions. From statistical viewpoint the mean inflation is hard to estimate due to short time horizon and evident non-stationarity in some inflation series (especially in less advanced economies). To draw any conclusions on the significance of the CBI-inflation relationship I assume that the data generating process has recently changed in the high-inflation countries and has become stationary. This supposition seems to be justified given the fast disinflation path in the least advanced countries and relatively stable inflation in 1996. Under this assumption, the annual inflation in 1996 is taken as an estimate of the mean for all countries. This inflation rate is interpreted as an “equilibrium” inflation that the Banks deliver given their policy objectives and the degree of independence.

3.6.2. Overall Index and Inflation Performance

An overall index of independence in **Table 4** is a sum of the political and economic indices from **Tables 1** and **2**. The inflation rate in the last column is the annual inflation rate in 1994.

Table 4
Overall index of legal independence for transition economies

	PI	EI	OE	Inflation (end-year) 1996
Belarus	4	3	7	39.30
Bulgaria	6	4	10	310.80
Croatia	7	4	11	8.62
Czech Republic	9	5	14	3.73
Georgia	7	5	12	13.81
Hungary	4	5	9	19.81
Kyrgyzstan	4	5	9	35.00
Latvia	7	4	11	13.16
Poland	7	5	12	18.68
Romania	5	3	8	56.90
Russia	5	3	9	21.80
Slovak Republic	6	6	12	5.40
Slovenia	8	4	12	8.82
Ukraine	3	2	5	39.86

Source: As Tables 1 and 2

Notes:

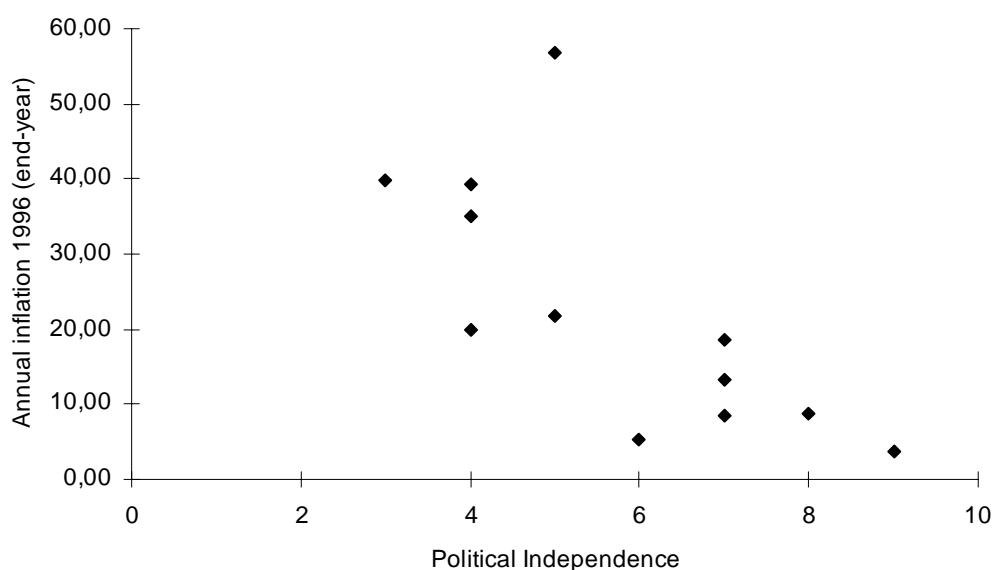
PI: index of political independence

EI: index of economic independence

OI: overall index

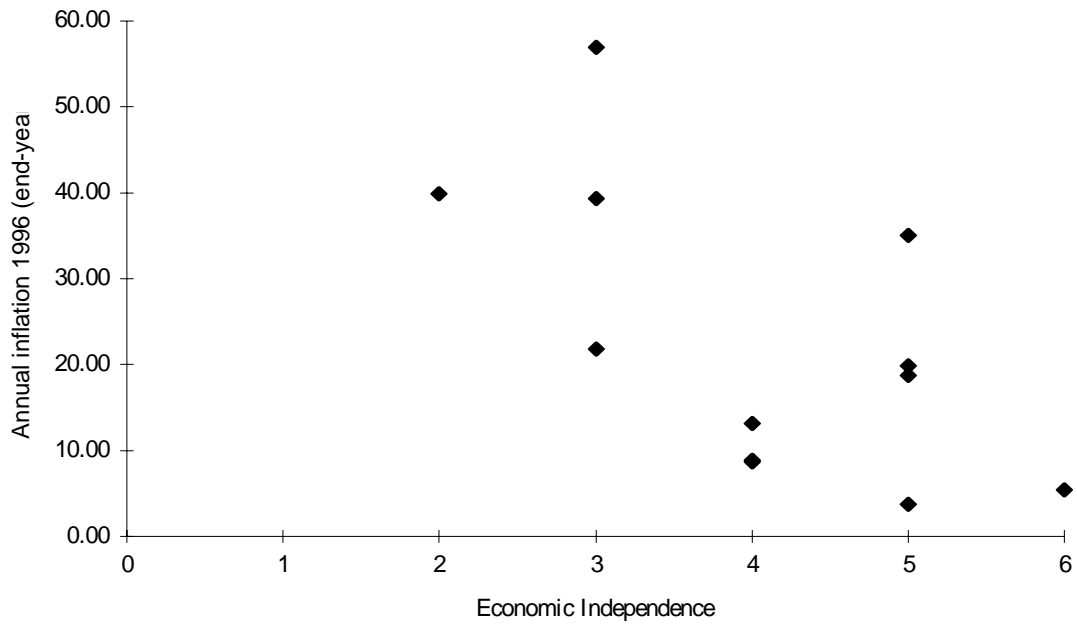
Figures 4 to 6 plots the annual inflation rate in 1994 against the political, economic and overall index of independence. Two countries (Bulgaria and Georgia) are excluded from the sample since the law was recently changed (in 1996). The relation between legal CBI and inflation rate in the sample seems to be strong.

Figure 4
Political independence (PI) and annual inflation (end-year) in 1996



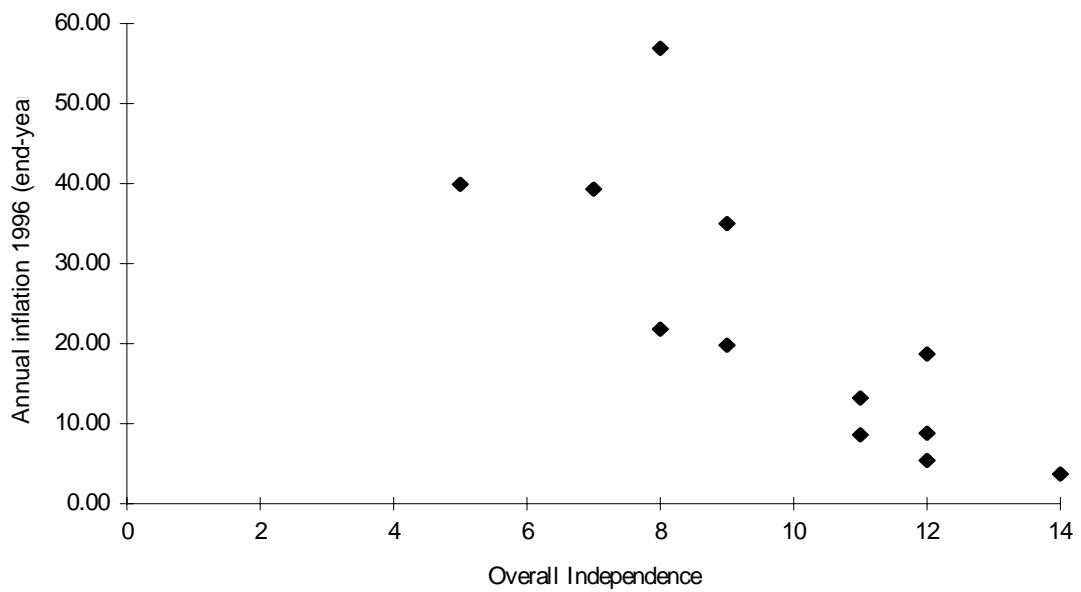
Source: As Tables 1,2 and 4

Figure 5
Economic independence (EI) and annual inflation (end-year) in 1996



Source: As Tables 1,2 and 4

Figure 6
Overall independence (OI) and annual inflation (end-year) in 1996



Source: As Tables 1,2 and 4

The visual inspection is confirmed by the OLS regression estimation in **Table 5**.

Table 5
Relationship between 1996 inflation rate (end-year) and indices of independence

	twelve countries (1)	twelve countries (2)	low-inflation countries (3)
constant	73.76 (5.54)	73.55 (5.99)	45.12 (2.95)
PI	-5.08 (-2.59)		
EI	-5.38 (-1.714)		
OI		-5.18 (-4.28)	-2.93 (-2.39)
R ²	0.65	0.65	0.50
No. of obs.	12	12	7

Note: t-values given in parentheses

The results strongly support the basic conclusions from the economic theory. The relation between CBI and the inflation rate is very strong in the sample of twelve countries under investigation. The political (PI) index is significant at standard significance level (column (1) in the table). The economic (EI) index is significant at 12%. One possible explanation for weaker relationship between EI and inflation is that formal provisions are not binding in practice. Some measure of actual EI is necessary, which will be developed in further research. The overall index is also highly significant (column 2). In all regressions the coefficients of determination are high.

As was already noted, countries in the group vary considerably in the progress of reforms. It is highly plausible that the relation in the whole sample is spurious. Central Banks in less advanced countries generally have lower degree of independence (because of lagged institutional reforms) and higher rate of inflation (because they started stabilisation later). The opposite is true for more advanced economies. To assess the robustness of results to sample selection, the regression for the group of low-inflation (Croatia, Czech Republic, Hungary, Poland, Slovak Republic and Slovenia) is run. The index of overall independence is significant in this regression (column 3) and the fit is considerably good. One may conclude that the relation is quite robust to the sample selection.

It is important to note that the strong correlation between CBI and inflation performance does not imply causality from CBI to inflation. It is plausible that countries which managed to reduce inflation decided to upgrade the CBI in order to avoid excessive monetary growth in a future or for some other reasons.

4. Conclusions

This paper discusses the role of institutional arrangements in anti-inflationary policy in transition economies of Central Europe and former USSR. The economic theory explains various motives for excessive monetary expansion. Policymakers can be tempted to increase employment above the natural level, collect the seignorage revenue, improve the balance of payment position or stabilise the financial system. The first motive is not very important in the high inflation environment which is characteristic for transition period. Other motives have significant effect on the inflationary history in post communist countries. Revenue motive seems to be crucial for understanding the excessive monetary expansion. The theory predicts that the temptation to use monetary policy combined with rational expectations of the private agents results in inflationary bias in the economy. People know the policymakers' goals and adjust to it by higher inflationary expectations. The optimal policymakers' response is to inflate at the rate expected by the people. The resulting equilibrium is sub-optimal, i.e., the inflation is higher and there are no real gains for the society. The solution to the problem is delegating monetary policy to the independent and conservative Central Banker. The paper investigates the degree of Central Bank's independence (CBI) in transition countries by constructing two indices of legal independence. The results show that the countries more advanced in reforms seem to have more independent Banks. In further analysis a strong relationship between inflation performance and the legal CBI emerges. However, the outcomes of the statistical procedures have to be taken with caution. Firstly, the sample under investigation is small and the time horizon is too short to draw any decisive conclusions. Secondly, the transitional economies are at different stages of reforms and the differences in inflation performance may be affected by other factors. Thirdly, the results do not imply causality between CBI and inflation. The independence might be upgraded after the successive stabilisation. The possible extension of the quantitative analysis may be investigation of the duration of the disinflationary process. This is left for further research.

It is important to note that the problem of CBI is wider than the concept of legal independence. To fully assess the Central Bank performance it is necessary to look at the actual independence, i.e., take into account the degree of adherence to the law in practice. The behavioural indices of CBI proposed in the literature are based on Governors' turnover rate or on the vulnerability of the Governor to political changes. These two measures reflect the political independence of the Bank. The economic independence may be evaluated by comparing the legal limits on lending to the Government with actual practice. The problem of actual CBI will be investigated in further research.

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APPENDIX - Central Bank Laws In Transition Economies

The appendix provides information on Central Bank law in transition economies which have been used in constructing the indices presented in the paper. It describes in greater details legal frameworks and current changes in the banking law. When the information are available, it also describes the relations between the banks and the governments in practice.

The description of each statute is divided into four sections, covering:

- governing bodies and financial management,
- objectives, formulation of monetary policy and relations with other State institutions,
- limitations on lending to the Government,
- banking supervision and exchange rate policy.

1. Belarus¹

The law “On the National Bank of the Republic of Belarus” (NBRB) was passed in December 1990.

1A. Governing Bodies and Financial Management

The Bank is managed by the Board being composed of the Chairman, his deputies and other members (Art. 9). The Chairman is appointed for six years by the Parliament on the recommendation of the Chairman of the Parliament. Deputies and other members of the Board are appointed by the Presidium of the Parliament on the recommendation of the Chairman of the Bank. The employees of the Bank may not be employed by any commercial organisation (Art. 10). The Bank incurs its expenses for account of its profits (Art. 12).

1B. Objectives, Formulation of Monetary Policy and Relations with other State Institutions

The main tasks of the Bank are regulating monetary circulation, coordinating monetary and credit activities, developing and supporting credit institutions “in accordance with the state policy of the Republic of Belarus” (Art. 2). The Bank is independent from other State bodies (Art. 4) but accountable to the Parliament (Art. 1). The Bank presents to the Parliament the annual report on its activity, financial affairs and the balance of the banking system (Art. 14). The NBRB and the Government prepare the draft of guidelines for the monetary policy for the following year. The project is presented to the Parliament together with the annual report on policy

¹ Source: Law „On the National Bank of the Republic of Belarus”, 14 December 1990.

implementation (Art. 5). The Governor of the Bank attends the Government meetings with a consultative vote (Art. 9).

1C. Limitations on Lending

The Bank is prohibited from making loans to the Government or using money emission to finance the budget deficit (Art. 6, 17). However, the Bank may be entitled to give a short-term credit to the Government for a period of six months and to purchase Government bonds.

1D. Banking Supervision and Exchange Rate Policy

The Bank is responsible for commercial banking supervision.

2. Bulgaria²

The Bulgarian National Bank was originally founded in 1897 and re-established in June 1991 when the new status was granted. The law was amended in April 1996 when the procedure for Bank's management dismissal was modified.

2A. Governing Bodies and Financial Management

The managing bodies of the Bank are the Governor, the Board of the Bank and the Plenary Council. The Board consists of the Governor, three Deputy Governors and five Heads of Departments of the Bank (Art. 11). Governor and Deputy Governors are nominated by the Parliament, other members by the President of the Republic on the Governor's recommendation. All members are elected for five years period. The Governor may not be appointed for more than two terms of office (Art. 12). Members of the Board may not be employees of any other organisations, except educational or scientific bodies (Art. 14). Board's member can be dismissed by the Parliament only in case of loss of ability to perform his duties for more than a year or if he is sentenced for a premeditated crime (Art. 15). By the amendment of April 1996, the Parliament may dismiss the Governor and Vice-Governors by majority of three-fifths of voices. The Plenary Council consists of the Board Members and six foreign exchange, finance, business and scientific specialists. Members of the Council are nominated by the Governor for three-years period. The Council approves the Central Bank budget, which is separate from the state budget.

2B. Objectives, Formulation of Monetary Policy and Relations with other State Institutions

The main objective of the Bank is maintaining the internal and external stability of the currency. The Bank formulates and conducts monetary policy (Art. 2) independently from other State institutions (Art. 47). In formulating monetary policy

² Source: Law on the Bulgarian National Bank, *Drzaven vestnik* No. 50, 25 June 1991 (with amendment of April 16, 1996).

Other sources: *Handbook of Central Banks in Central and Eastern Europe*, BIS 1995.

the Bank and the Government shall inform each other on their intentions and proposed measures (Art. 3). The Board of the Bank usually invites the Government delegate to its meeting when taking important decisions. Accordingly, the Government invites the Governor to its meetings. The Bank reports on its activity to the Parliament (Art. 1).

2C. Limitations on Lending

The NBB can grant short term credit to the Government limited to 5% of the budget revenue. The maturity of the credit is limited to three months and the credit has to be repaid before the end of the calendar year (Art. 46). The bank may purchase Government securities on the secondary market (Art. 33) and on the primary market as a part of public issue (Art. 48).

2D. Banking Supervision and Exchange Rate Policy

The Bank is responsible for supervising commercial banks (Art. 40-44) and conducts exchange rate policy.

3. Croatia³

The National Bank of Croatia (NBC) was established in 1992, after a dissolution of the Republic of Yugoslavia. The legal base for functioning of the Bank is the Law on the National Bank of Croatia of 1992 with latter amendments.

3A. Governing Bodies and Financial Management

The Bank is governed by the Board being composed of the Governor, Deputy Governor, Vice-Governors and at most eight other members appointed from among independent experts. All Board members are appointed and dismissed by the Parliament for six years term, the Deputy Governor and Vice-Governors are designated on the recommendation of the Governor. Independent experts may not be employee nor participate in management of the institutions controlled by the Central Bank (Art. 66, 72). The decisions of the Board are taken with two-third majority of the votes. If the Board cannot reach an agreement which is important for implementing Central Bank tasks, the Governor may temporarily issue a decision himself. The final decision on the controversial issue is taken by the Parliament (Art. 68).

The salaries of the Board's members are determined in the Statute of the Bank, passed by the Board (Art. 66). The financial plan and the annual financial statement are formulated by the Board of the NBC and approved by the Parliament (Art. 79).

³ Source: Law on the National Bank of Croatia, *National Gazette* 74/92 (with latter amendments).

3B. Objectives, Formulation of Monetary Policy and Relations with other State Institutions

The primary goal of the Bank is to ensure a stable currency and liquidity in the domestic and international transactions (Art. 2). To implement this task the Board of the Bank independently establishes the objectives and measures of monetary and foreign exchange policy (Art. 3 and 67). The Bank shall support Government economic policy if it does not violate the main objective of currency stability (Art. 2). The National Bank of Croatia is liable to the Parliament (Art. 3), reports to the Parliament on request and submits the report on its activity twice a year (Art. 8).

3C. Limitations on Lending

The Government keeps its deposits in the National Bank of Croatia (Art. 57). The NBC can grant short term credit to the government which have to be repaid by the end of the budgetary year. Total amount of the credit is limited to 5 percent of the budget in the current year (Art. 58). The interest rate charged on this credit is the NBC discount rate (not specified in the law on NBC).

3D. Banking Supervision and Exchange Rate Policy.

The Bank is responsible for supervising the operation of commercial banks (Art. 4). The NBC conducts exchange rate policy (Art. 26-34).

4. Czech Republic⁴

The Czech National Bank (CNB) was established in January 1993, as the successor of the State Bank of Czechoslovakia in the Czech Republic. The law on the Czech National Bank was passed by the Parliament in December 1992.

4A. Governing Bodies and Financial Management

The Bank is headed by the Board which consists of the Governor, two Vice-Governors and four other senior officers of the Bank. The Governor and the Vice-Governors are appointed by the President of the Republic. Other members are appointed by the President from the senior officers of the Bank. All Board members are appointed for six years term and can be dismissed in case of crime, disability or upon own request. The Board member may not be a member of the Parliament, may not hold any position in the Government and may not hold certain positions in commercial banks and other companies (Art. 6). The Bank Board approves the Bank budget and specifies the salary of the Governor (Art. 5).

⁴ Source: Act on the Czech National Bank (Act No 6/1993 of the Czech National Council)
Other sources: *Handbook of Central Banks in Central and Eastern Europe*, BIS 1995.

4B. Objectives, Formulation of Monetary Policy and Relations with other State Institutions

Main task of the CNB is to ensure the stability of the national currency (Art. 2). The Board of the Bank formulates and determines the instrument of the monetary policy to achieve this goal. The Government delegate can participate in the Board meetings in an advisory capacity (Art. 9). The Bank performs an advisory role to the Government on banking and monetary issues. The NBS Governor is entitled to participate in the Government meetings (Art. 10, 11). The Bank submits to the Parliament a report on monetary development at least twice a year (Art. 3).

4C. Limitations on Lending

The State account in the National Bank may not be overdrawn. The Bank can grant short term credit to the State through the purchase of the Government securities. The amount of the credit is limited to 5% of the budget revenues in the previous year, its maturity is limited to three months (Art. 30)⁵. The maturity of the Government securities purchased on the secondary market is limited to one year (Art. 28).

4D. Banking Supervision and Exchange Rate Policy

The CNB is responsible for commercial banks supervision (Art. 44-46) and determines the exchange rate (Art. 35).

5. Georgia⁶

The National Bank of Georgia (NBG) was established in 1991 from regional branch of the State Bank of USSR. The statute of 1991 made the Bank subordinated to the Parliament and to Government (Wellisz 1996). In 1991-1994 period the NBG was subject to substantial political pressure. It lent to the Government and gave overdraft facilities without limits. The situation changed in June 1995 when the new law, based on the IMF project, strengthened the Bank's independence. The newly granted independence was partially limited by the amendment of May 1996.

5A. Governing Bodies and Financial Management

The Bank is governed by the Board which consists of the President of the Bank, three Vice-Presidents and five other members. All members are appointed for seven years by the Parliament on the recommendation of the President of the Republic. The provisions for dismissal of the Board's members, non-political only, were specified in the 1995 law but, by the amendment of 1996, now apply to the President and Vice-

⁵ In 1993 the limit was set to 7% of revenues.

⁶ Source: Law "On National Bank of Georgia" (23 June, 1995 with latter amendments)

Other sources: Wellisz, S. (1996), *Georgia, A brief survey of Macroeconomic Problems and Policies*, CASE Studies and Analyses, No. 87

Kloc, K (1997), *Central Bank and commercial banks in Georgia*, CASE Studies and Analyses, No. 113 (in russian)

Presidents only. All whole Board may be dismissed if the members do not agree with the monetary and credit policy set by the Parliament (Art. 28, also see section 5B below) Salaries of the Board's members are set by the Parliament (Art. 9 as amended in 1996). President of the Republic and the Parliament or Government member may not be a member of the Bank's Board (Art. 10). The Bank is independent in deciding on its finances and incurs its expenses for account of its profits (Art. 3.2).

5B. Objectives, Formulation of Monetary Policy and Relations with other State Institutions

Main objectives of the Bank are protecting the purchasing power of the national currency, price stability and stability of the money and credit system in Georgia (Art. 2). Other State bodies must not interfere in Bank's activity as specified by the law (Art. 3.1). In the law of 1995 the Bank determines the monetary and credit policy. By the amendment of 1996 the Parliament's acceptance of the guidelines for policy submitted by the Bank is required (Art. 28). The Parliament may change the guidelines and the Bank is obliged to subordinate to its decision. In case of disagreement, all Board's members are dismissed. The Bank submits to the Parliament a yearly report on its finances and economic situation in the Republic, as well as monthly reports on its balance (Art. 68). The NBG acts as the advisor to the President and the Government in issues related to its activity (Art. 52.2). In particular, the Government receives advise on the annual budget proposal (Art. 52.3).

5C. Limitations on Lending

The Bank must not cover the budget deficit by monetary emission (Art. 37) but may grant short-term credit to the Government backed by the Government bonds (Art. 57). The maturity of this credit is limited to six month and the amount to 5% (in certain circumstances to 8%) of the average Government revenue in three last financial years. The ceiling applies to the purchases of the Government securities but, if it is necessary for conducting monetary policy and if the securities are purchased on the secondary market, it may be relaxed. The interest rate charged on all credits is determined by the market rate.

5D. Banking Supervision and Exchange Rate Policy

The NBG conducts the exchange rate policy (Art. 47) and determines the exchange rate (Art. 36) according to the guidelines accepted by the Parliament (Art. 69).

The Bank is responsible for commercial banking supervision (Art. 59).

6. Hungary⁷

The National Bank of Hungary (NBH) was founded in 1924 and re-established in 1987. The act "On the National Bank of Hungary" was passed by Parliament in October 1991.

6A. Governing Bodies and Financial Management

The highest policy making body of the NBH with respect to the monetary policy is the Central Banking Council. The Council consists of the President, Vice-Presidents and other members (Art. 57 of the act). The President is appointed for six years and dismissed by the President of the Republic on the recommendation of the Prime Minister (Art. 58-2). The recommended person is questioned by the relevant Parliamentary Committee at a hearing (Art. 58-3). The President of the NBH can be dismissed in case of crime, "unworthiness" or incapability to perform the tasks associated with the office for other reasons beyond his control or attributable to him, (Art. 58-7). The procedures for appointment and dismissal of the Vice-Presidents and other members of the Council are the same but their term of office is three years (Art. 57-3-c, 59, 60). Under current amendments to the Bank charter (taking effect on January 1, 1997) NBH President makes proposals for the post of five Vice-Presidents. The Prime Minister, if he accepts the proposals, submit the names to the President of the Republic who appoints Vice-Presidents for 6 years term. The same procedures applies to other members of the Council, appointed for three years term.

The Board of Directors, which assists the President in his duties, consists of the President, Vice-Presidents and other members elected by the General Assembly of shareholders on the recommendation of the President of the NBH (Art. 61). Members of the Board and the Council "may not hold office in any political party or appear in public on behalf, or in favour, of a political party" (Art. 69).

The salaries of the President, Vice-Presidents, members of the Central Banking Council and the Board of Directors are determined by the General Assembly of the shareholders (Art. 56). The budget of the Bank is discussed by the Board of Directors and approved by the President of the NBH (Art. VII-3 and VII-2 of the NBH Statutes). The annual income statement is determined by the General Assembly (Art. 56).

6B. Objectives, Formulation of Monetary Policy and Relations with other State Institutions

The fundamental objective of the Bank is "the protection of the internal and external purchasing power of the national currency" (Art. 4). Other goals enumerated in the status are: the development of the internal and external payment system, steady development and international integration of the economy. The bank is independent in conducting monetary policy (Art. 6) but the means of this policy shall also be used "to

⁷ Source: Act "On the National Bank of Hungary" (Act LX of 1991), Statutes of the National Bank of Hungary (12 February, 1992).

Other sources: Other sources: *Handbook of Central Banks in Central and Eastern Europe*, BIS 1995.

support the realisation of the Government's economic policy" (Art. 3). The guiding principles and the means of the monetary policy are set by the Central Bank Council (Art. 57-5) but the Bank and the Government shall co-ordinate the guiding principles with annual budget proposal and possible deficit financing (Art. 43). NBH participates in framing the Government's economic policy (Art. 42). President of the Bank is invited to the Government's meetings if problems affecting NBH tasks are discussed (Art. 47). Government cannot give orders to the Bank on the issues defined as the NBH tasks (Art. 45). Government's delegate participates in the Board meetings but has no right to vote (Art. 57-4). President of the NBH presents to the Parliament the guiding principles of the monetary policy for the year and an annual account of the NBH activity (Art. 41).

6C. Limitations on Lending

The Bank can grant credit to the central budget. The increase in the stock of credit must not exceed 3 percent of the planned receipts of the central budget on none of the days of the year⁸. Interest rate on this credit should be guided by the NBH basic interest rate (Art. 19-1, 19-3, 19-4). The above ceiling applies to the purchases of the Government's securities on the primary and secondary market (Art. 22-1). Current amendment to the NBH law prohibits the Bank from purchasing Government securities at the primary market. Under the new law the Bank cannot grant direct credit to the central budget except liquidity loans with a limit of 2% of the planned budget revenue.

6D. Banking Supervision and Exchange Rate Policy

Supervisory functions are conducted by the Board of Supervision (the NBH organ) and State Bank Supervision (the Government's organ) (Art. 51, 62).

The NBH is responsible for protecting and influencing exchange rate which is determined by the Government.

7. Kyrgystan⁹

The National Bank of the Republic of Kyrgystan (NBK) was established after the dissolution of the USSR and the proclamation of the independent state.

The law "On the National Bank of the Republic of Kyrgystan" was passed by the Parliament in December 1992. Two amendments were passed in January 1994 and in April 1994.

7A. Governing Bodies and Financial Management

The managing bodies of the Bank are the Board of Directors and the Chairman of the Bank of Kyrgystan (Art. 24). The Chairman is appointed by the President of the

⁸ This limit has become operational since 1995. The credit was not limited in 1992 and limited to 5% and 4% in 1993 and 1994 respectively.

⁹ Source: "On the National Bank of the Republic of Kyrgystan" (December 1992 with latter amendments).

Republic of Kyrgystan with the approbation of the Parliament for a term of five years. The salary of the Chairman is set by the President. The Board consists of nine members, including deputies of the Chairman, appointed for five years period by the President on the recommendation of the Chairman. The term of office of the Chairman and his deputies must not coincide. Other members of the Board are representatives from the Ministry of Finance and Economics, the financial system and other branches of national economy. Members of the Board may be dismissed if they abuse their official position, become unable to perform their duties or apply for retirement. Official salaries of the Board members are determined by the Chairman. The Chairman and other Board members are prohibited from holding other positions in financial organisations (Art.28). The financial plan of the Bank and the report on its implementation are approved by the Chairman (Art. 25).

7B. Objectives, Formulation of Monetary Policy and Relations with other State Institutions

The main objectives of the Bank are ensuring the stability of the official currency of the national currency, conducting monetary and credit control, protecting the interests of creditors and depositors, ensuring banking competition and overseeing the observance of banking law (Art. 2). The Bank is independent from the Government. Any Government inference in the activity delegated to the Bank by law is prohibited (Art. 3). The monetary policy is formulated and conducted by the Bank in cooperation with the Government. If the Government does not agree with the Bank policy, it makes it known to the Parliament which, after consulting with the Bank and with the conclusions of the Control Office of the Republic of Kyrgystan, may force the Bank to change the adopted policy by passing a standard act (Art. 7). The Bank acts as the financial advisor to the Parliament, the President and the Government. The NBK presents annual report on its activity and financial statement to the Parliament (Art. 4).

7C. Limitations on Lending

The law prohibits the use of monetary emission to finance the Government deficit (Art. 8) and to directly credit budget deficit. Purchases of the Government securities on the primary market are also prohibited. However, the Bank may grant short term credit to the Government to cover temporary discrepancies between revenues and expenditure. The maturity of the credit is restricted to 6 months and its amount to 5% of the gross domestic product (Art. 10). The procedures for managing the State and regional budgets are specified by the Bank together with the Ministry of Economics and Finance (Art. 12). The Bank may grant credit for the production of agriculture products according to the list developed in cooperation with the Government and, for long term credits only, approved by the Parliament.

7D. Banking Supervision and Exchange Rate Policy

The Bank is responsible for banking supervision (Art. 17). The NBK formulates and implements the exchange rate policy (Art. 9).

8. Latvia¹⁰

The Bank of Latvia (BL) was established in 1922 and existed until 1940. The Bank was restored *de jure* in March 1990 and started its operations in September 1991, after the declaration of independence of the Republic of Latvia and collapse of the USSR. The law "On the Bank of Latvia" was passed by Parliament in May 1992.

8A. Governing Bodies and Financial Management

The Bank is administered by a Board of Governors and an Executive Board. The Board of Governor consists of the Governor, Deputy Governor and six other members. The Governor is appointed by the Parliament on the recommendation of its Chairperson. According to the amendment, passed in June 1997, the Governor is appointed by the Parliament on the recommendation of its (at least) ten members. The Deputy Governor and other members are appointed by the Parliament on the recommendation of the Governor. All members are appointed for six years term and, by the amendment of June 1997, can be dismissed on his own request and in case of crime or inability to perform his duties for more than six month (Art. 22). The conditions The Board of Governors reviews and approves the annual budget of the bank and determines the salaries of the Boards' members and other employees. (Art. 26, 30). The Executive Board, consisting of six person from the Bank's senior management, is established by the Board of Governors to run the Bank on a day-to-day basis. The Chairperson of this Board is appointed by the Board of Governors on the recommendation of the Governor, other members are nominated by the Board of Governors on the recommendation of the Chairperson. The members of the Executive Board can be dismissed by the Board of Governors (Art. 23). The members of the Board of Governors and the Executive Board may not "hold more than one paid position simultaneously" (Art. 31).

8B. Objectives, Formulation of Monetary Policy and Relations with other State Institutions

The main task of the Bank is protecting the price stability in the State. Other objectives mentioned in the Law are "facilitating free competition, effective allocation and circulation of assets and the stability, co-ordination and supervision of the financial system" (Art. 3). The Board of Governors determines and ensures the implementation of the monetary policy in accordance with these tasks (Art. 13, 26). The Minister of Finance participates in the meetings of the Board of Governors but with no right to vote. If the Minister of Finance does not accept the Board's decision, he has a right to postpone the execution of the decision for ten days (Art. 25). The decision is executed if the Board does not change it during this period (Art. 25). The Bank acts as a consultant of the Government and the Parliament on monetary and banking policy (Art. 6). The Governor is entitled to participate in the Government meetings (Art. 28). The Parliament supervises the economic activity of the Bank and

¹⁰ Source: Law "On the Bank of Latvia" (19 May, 1992), "Amendments to the Law 'On the Bank of Latvia'" (18 June, 1997).

Other sources: *Handbook of Central Banks in Central and Eastern Europe*, BIS 1995.

audits Bank's documents. After the audit and Board of Governors' approval, the Bank's annual report and balance sheet are published for the public knowledge (Art. 43).

8C. Limitations on Lending

The Bank of Latvia is entitled to grant short-term credit to the Government, limited to one-twelfth of the current budget annual revenue (Art 36). An agreement between the Bank and the Ministry of Finance gradually reduced the direct credit line to the Government, planned to be eliminated by November 1995. Thereafter the deficit has been financed solely by issuing Treasury Bills. The Bank is also entitled to perform other transactions with Government securities (Art. 37).

8D. Banking Supervision and Exchange Rate Policy

The Bank sets the official exchange rate (Art. 4) and supervises commercial banks (Art. 10).

9. Poland¹¹

The National Bank of Poland, originally founded in 1828, was re-established as a genuine Central Bank in January 1989, when the new Law on the National Bank was passed by the Parliament. In February 1992 an amendment to the law was adopted.

9A. Governing Bodies and Financial Management

The Bank is managed by the Governor, appointed by the Parliament on the recommendation of the President of the Republic for six years period (fixed term of office was adopted in the 1992 amendment). The Governor can be dismissed by the Parliament on his own request, in case of criminal offence, inability to perform his duties for more than three months and prohibition by the State Tribunal to hold a managerial position (provisions for dismissal introduced by the amendment of 1992). The Governor may not hold his position for more than two consecutive terms of office. The Parliament, by resolution, can bring the Governor to justice for a violation of the Constitution. In this case the Governor is suspended in his duties. The Board of the Bank, which has limited authority, consists of the Governor, Deputy Governor, Vice-Governors and other members. The Deputy Governor and the Vice-Governors are nominated by the President of the Republic on the recommendation of the Governor. Other members of the Board are appointed by the Governor. Salaries of the Boards' members are set according to the law on the State officials' salaries (Art. 49, 51). The Bank manages its finances in accordance with the State's socio-economic policy passed by the Parliament (Art. 73).

¹¹ Source: Law on the National Bank of Poland (31 January, 1989) with amendments (February 14, 1992).

Other sources: Baka, W. (1995), *On the Question of Central Bank Independence*, Faculty of Economic Sciences, University of Warsaw, Economic Discussion Papers No. 10
Handbook of Central Banks in Central and Eastern Europe, BIS 1995.

9B. Objectives, Formulation of Monetary Policy and Relations with other State Institutions

The main tasks of the Bank is to strengthen the Polish currency and to co-operate in carrying out the Government economic policy (Art. 5). The Bank co-operates with other State institutions in formulating and implementing economic policy (Art. 16). According to the amendment of December 1992, the NBP formulates monetary policy in accordance with the acts and resolutions of the Parliament (Art. 6). Each year the Governor submits to the Parliament a yearly report on the monetary developments and the draft of the monetary policy assumptions for the following year, with Government's opinion on this proposal (Art. 17, 19). The monetary policy assumptions are finally passed by the Parliament (Art. 17) but in practice the Bank's proposal has always been approved. The Governor presents to the Government and the Parliament the reports on monetary developments and balance of payments (Art. 20). The NBP gives its opinion on the budget law proposal (Art. 16).

9C. Limitations on Lending

The Bank can grant credit to the Government by purchasing Government Bills. The credit is limited to 2% of the anticipated budget revenues (Art. 34). In practice, the limit has been suspended by the budget law, where the amount of credit is predetermined, forcing the Bank to purchase the Government Bills. Interest rate on the Treasury Bills purchased from the Government is equal to the interest rate on the corresponding Treasury Bills sold through the regular auction organised by the NBP (not specified in the CB law).

9D. Banking Supervision and Exchange Rate Policy

The mechanism of the exchange rate determination is set by the Government, on the proposal of the Governor in consultation with the Minister of Finance and the Minister for Foreign Economic Relations. The exchange rate is determined by the Bank (Art. 39). The Bank supervises commercial banks (Art. 44 - 47).

10. Romania¹²

National Bank of Romania (NBR) was founded in 1880 and re-established in December 1990. The legal base for operating is the National Bank Statute of March 1991.

¹² Source: National Bank Statute (Law No 34/29 March 1991).

Other sources: *Handbook of Central Banks in Central and Eastern Europe*, BIS 1995

10A. Governing Bodies and Financial Management

The bank is headed by a Board of Directors, appointed by the Parliament on the recommendation of the Prime Minister for a renewable period of 8 years (Art. 44). Parliament can also revoke Board's members on the recommendation of the government (Art. 46). The Governor is a member of the Board and his appointment and dismissal procedure, as well as term of office, are the same as for other members of the Board. Members of the Board may not be Members of the Parliament nor hold any other office in justice or state administration (Art. 48). Governor, on the behalf of the Board, presents to the Parliament annually a report on monetary and credit situation (Art. 49).

10B. Objectives, Formulation of Monetary Policy and Relations with other State Institutions

The statute provides an objective of preserving the stability of the national currency “within the framework of the country' economic and financial policy”. The National Bank formulates and conducts monetary and credit policy to achieve this goal (Art.1).

10C. Limitations on Lending

The Bank can grant advances to central government to cover budget deficit and sets zero interest rate on this credit. The total amount of the advances cannot exceed 10 percent of the total approved budget (and twice the sum of the capital and reserve fund of the Bank) (Art. 29, 31). The Bank keeps the current account of the State Treasury but the Bank status does not specify the method of recording the operations on this account. As a result the NBR automatically covered budget deficit. In June 1993 the Bank and the Ministry of Finance signed an agreement according to which only the possible debit balances on the Government accounts with four banks (the National Bank, the Romanian Commercial Bank, the Bank for Agriculture and the Romanian Bank for Development) are covered by the NBH.

10D. Banking Supervision and Exchange Rate Policy

The Bank is exclusively responsible for commercial banking supervision (Art. 26) and sets the discount and refinancing rates for banking companies (Art. 23). Foreign exchange policy is conducted by the Bank in co-operation “with other State institutions” (Art. 32).

11. Russia¹³

The Central Bank of the Russia (CBR) was established in July 1990 on the basis of the Russian Republican Bank “Gosbank”. Law on the Central Bank of Russia was

¹³ Source: Law “On the Central Bank of RSFSR” (2 December, 1990).

passed by the Parliament in December 1990. In January 1992 the CBR took over all activities of the State Bank of the USSR. The law was considerably amended in April 1995.

11A. Governing Bodies and Financial Management

The CBR is managed by the Chairman and the Board of Directors (Art. 11). The Chairman is appointed and dismissed by the Parliament on the recommendation of the President for four years period (Art. 12). The Chairman may be dismissed for his own request, in case of loss of ability to perform his duties, crime or violating the federal law related to Central Bank activity. Twelve other members of the Board of Directors are appointed by the Parliament on recommendation of the Chairman of the Bank who consults with the President of the Russian Federation (Art. 13). Members of the Board may be dismissed by the Parliament on recommendation of the Chairman (Art. 13). The Board member may not hold any office in other State institution nor be a member of any political party (Art. 17). Salaries of the management and the Bank's budget for the following year are decided by the Board of Directors (Art. 16).

11B. Objectives, Formulation of Monetary Policy and Relations with other State Institutions

The main tasks of the Central Bank are protection of the national currency stability and development of the banking and payment system (Art. 3). Revenue is not enumerated among the Bank's objectives. The Bank of Russia, in co-operation with the Government, determines and conducts monetary and credit policy (Art. 4, 16). The Chairman co-operates in framing the Government's economic policy and participates in its meetings. Accordingly, the Minister of Finance and the Minister of Economy participate in the Board of Directors' meetings (Art. 19). The NBR is independent from the Government and has a right to appeal to the court for invalidating any Government decision that interferes in Bank's activity as defined by the law (Art. 5). The Bank is subordinated to the Parliament (Art. 5) and has to present annual report on its activity, including annual statement which has to be approved by the Parliament (Art. 25). The Bank's draft of guidelines for monetary policy, presented to the Parliament and the President, has to be approved by the Parliament (Art. 44).

11C. Limitations on Lending

The CBR may not grant credit to finance the budget deficit nor buy the Government securities on the primary market, except cases when such financing is predicted in the budget law (Art. 22). In the law of 1990 the Bank was allowed to cover temporary deficits between revenues and expenditure (Art. 17). The maturity of this credit was limited to six months and the limit on the amount of the credit was set by the Parliament.

11D. Banking Supervision and Exchange Rate Policy

The Bank sets the official exchange rates (Art. 52) and supervises commercial banks (Art. 55).

12. Slovak Republic¹⁴

The National Bank of Slovakia (NBS) was established in January 1993 and is the successor of the State Bank of Czechoslovakia in Slovak Republic. The Bank is operating under the law on the National Bank of Slovakia of November 1992.

12A. Governing Bodies and Financial Management

The Board of the Bank, highest governing body, is made up of the Governor, two Vice-Governors, two Executive Directors of the Bank and three other members (Art. 6, 7). The Governor and the Vice-Governors are appointed by the President of the Republic on the recommendation of the Government for six years. The Directors and other Board members are appointed by the Government on the recommendation of the NBS Governor for six and four years respectively. Board member may not be a Member of the Parliament, may not hold any office in the Government and may not hold positions in the executive, supervisory and regulatory bodies of the commercial banks or other companies. Board member can be dismissed if he lost the ability to carry out his duties, committed a crime or upon his own request. Membership in the Board is limited to two consecutive terms (Art. 7). The Directorate is the executive body of the Bank and consists of the Vice-Governor, appointed by the Governor, and the chief Executive Directors of the Bank (Art. 11).

12B. Objectives, Formulation of Monetary Policy and Relations with other State Institutions

Main objective of the NBS is the stability of the national currency (Art. 2). The Bank supports Government economic policy within the limit set by the Bank status (Art. 12). The monetary policy and its instruments are determined by the Board. The Government delegate can participate in the Board meetings in an advisory role (Art. 12). The Bank, in turn, conducts an advisory role to the Government on banking and monetary issues. The NBS Governor participates in the Government meetings (Art. 13). The National Bank of Slovakia presents to the Parliament a half-yearly report on monetary development (Art. 3).

12C. Limitations on Lending

The NBS keeps the State account which may not be overdrawn. The Bank can grant short term credit to the Slovak Republic by purchasing Government securities. The amount of the credit is limited to 5% of the budget revenues and its maturity is limited to three months (Art. 25). The NBS may purchase the Government securities on the secondary market with maturity limited to one year (Art. 23).

¹⁴ Source: The National Bank of Slovakia Act (Act No 566, 18 November 1992).
Other sources: *Handbook of Central Banks in Central and Eastern Europe*, BIS 1995

12D. Banking Supervision and Exchange Rate Policy

Supervision on commercial banking is conducted by the NBS (but a government inspection is also carried out by the Ministry of Finance or an institution delegated by it (Art. 36, 37). The National Bank of Slovakia is responsible for setting the exchange rate (Art. 28).

13. Slovenia¹⁵

The National Bank of Slovenia (NBS) was founded in June 1991 when the Law on the Bank of Slovenia was adopted.

13A. Governing Bodies and Financial Management

The managing body of the Bank are the Governor and the Board of the Bank. The Board is made up of the Governor, Deputy Governor, three Vice-Governors and six external members who are independent experts. The Governor is appointed by the Parliament on the recommendation of the President of the Republic Slovenia, Deputy Governor and Vice-Governors are nominated by the Parliament on the recommendation of the Governor. The experts are proposed by the President of the Republic and appointed by the Parliament. The experts may not be bound in any way to the organisations supervised by the Bank of Slovenia and may not be elected or appointed officials of the State (Art.13). Term of office of all Board members is six years. The decisions of the Board are taken with two-third majority of the votes. If the Board cannot reach an agreement and, due to this fact, the Governor cannot implement his tasks, the final decision on the disputable issue is taken by the Parliament (Art. 21). The Governor and the Board are formally responsible to the Parliament (Art. 16).

13B. Objectives, Formulation of Monetary Policy and Relations with other State Institutions

The main objective of the National Bank of Slovenia is to maintain the stability of the national currency and liquidity of the payment system (Art. 2). The Bank is independent in formulating and implementing monetary policy. The Bank is controlled by the Parliament. The Bank presents on request, but at least twice a year, the report on its activity to the Parliament (Art. 4). The Financial Plan for the current year and the Annual Financial Statement which are subject to approval by the Parliament (Art. 82).

¹⁵ Source: Law on the Bank of Slovenia (25 June 1991), Statute of the Bank of Slovenia (January 1993), Annual Report (1996).

13C. Limitations on Lending

The Government keeps its deposits in the National Bank of Slovenia (Art. 60). The NBS determines the procedures for performance of transactions for the Government (Art. 62). The Bank can grant short term credit to the government which have to be repaid by the end of the budget year. However, since the establishment of the Bank, the Government has never taken advantage of this possibility. The law limits the total amount of this credit to 5 percent of the budget in the current year and 20% of the anticipated budget deficit. The Bank shall inform the Parliament on the loans granted to the Government. (Art. 61).

13D. Banking Supervision and Exchange Rate Policy

The National Bank of Slovenia supervises commercial banks (Art. 50-59) and is responsible for exchange rate policy (Art. 40-49).

14. Ukraine¹⁶

National Bank of Ukraine (NBU) was established in. In March 1991 the law "On banks and banking activity" was passed by the Parliament. Chapters II and V of this law establish a legal framework for National Bank activity.

14A. Governing Bodies and Financial Management

The NBU is managed by a Board of the Bank. The Board consists of the Governor, Vice-Governors and other members. By the amendment to the law (passed on 23 December, 1993) the Governor is appointed by the Parliament, on recommendation of the Chairman of the Parliament, for four years period. Vice-Governors and other members of the Board are nominated by the Presidium of the Parliament on recommendation of the Governor (Art. 10).

14B. Objectives, Formulation of Monetary Policy and Relations with other State Institutions

The law on NBU does not mention maintaining the price stability among the Bank's tasks enumerated in Art. 8. The Bank is subordinated to the Parliament (Art. 7). Each year the Parliament passes the guiding principles of the monetary and credit policy for the following year (Art. 12). The draft of the monetary policy assumptions is submitted by the Board of the Bank. The Bank presents annual report on its activity and situation of the banking system, as well as financial report, to the Parliament. The statute of the Bank is approved by the Parliament.

14C. Limitations on Lending

The Parliament may allow the Bank to grant credit to the Government, but formally the law prohibits the Bank from financing Government deficit (Art. 14).

¹⁶ Law "On banks and banking activity" (20 March, 1991) with latter amendments.

14D. Banking Supervision and Exchange Rate Policy

The NBU sets the exchange rate (Art. 8) and (the amendment passed on 17 June, 1993). The Bank is responsible for supervision of commercial banks (Chapter V).