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## Measuring Central Bank Independence in Selected Transition Countries and the Disinflation Process

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**Sandra Dvorsky**

# Measuring Central Bank Independence in Selected Transition Countries and the Disinflation Process

# Contents

# Sandra Dvorsky[1]

# Measuring Central Bank Independence in Selected Transition Countries and the Disinflation Process

## Abstract

The paper measures the degree of legal and actual central bank independence (CBI) in five Central and Eastern European transition economies striving for EU accession, namely the Czech Republic, Hungary, Poland, Slovakia and Slovenia (CEEC-5). The degree of legal CBI is measured by applying the two most widely used indices, the Cukierman and the Grilli-Masciandaro-Tabellini (GMT) indices. Moreover, the turnover rate of central bank governors is used as a proxy to measure actual CBI. The paper gives an interpretation of computed results, comparing the findings with those of other authors and earlier calculations. Furthermore, the indices on legal and actual CBI themselves are critically reviewed, in particular against the background of the Maastricht Treaty requirements, which in practice constitute the driving force for any amendment of central bank laws in the CEEC-5. Moreover, the role of CBI in bringing down inflation in the CEEC-5 at different stages of transition is briefly discussed. The paper concludes that the overall degree of legal CBI is comparatively high in all countries examined, while the measured turnover rates of governors do not seem to fully reflect the degree of actual CBI in the CEEC-5. Looking at the role of CBI in the disinflation process at different stages of transition, the main causes for inflation seem to have been beyond the direct control of the central bank. A high degree of CBI, together with a reasonable mix of fiscal and monetary policies as well as structural reforms, will be necessary for the CEEC-5 to meet all requirements for joining the EU and, in a more distant future, for adopting the euro.

**Key words**: transition, central bank independence, disinflation

# 1   Introduction

The main purpose of this paper is to measure the degree of central bank independence (CBI) in five Central and Eastern European transition economies striving for EU accession, namely the Czech Republic, Hungary, Poland, Slovakia and Slovenia (referred to as the CEEC-5 below).

The idea of measuring the degree of CBI in these countries was mainly motivated by an earlier paper, which reviewed central bank legislation in the CEEC-5 by applying the requirements of the Maastricht Treaty as a yard-stick.[2] While no measurement exercise of legal CBI was undertaken in 1997, for this paper it seemed interesting to apply CBI measurement models to the legislation currently in force in the CEEC-5, thus contributing to the ongoing discussion on CBI in these countries. I applied the two most widely used indices of CBI measurement to draw a comparative picture of the current state of central bank legislation in the CEEC-5 and to assess the progress achieved by individual countries during the transition period. Subsequently, I compared my results with those of other authors and earlier studies. Moreover, the paper will critically review the indices themselves as well as the process used to score their subitems, in particular against the background of the Maastricht Treaty requirements, which in practice constitute the driving force for any amendment of central bank laws in the CEEC-5. In order to complete the picture, I will measure the degree of actual CBI, thus updating my own calculations on the turnover rate of governors in the CEEC-5 (see Radzyner and Riesinger, 1997). While a quantification of CBI is often used as a starting point for assessing a possible relationship between the degree of CBI and inflation, this paper will not correlate computed measures of legal or actual CBI to inflation data of past years. Instead, I will present stylized facts on the role of CBI in the disinflation process at different stages of transition.

The remainder of this paper is structured as follows: Section 2 will deal with the measurement of CBI, starting with a survey of recent theoretical and, in particular, empirical literature. Subsequently, the degree of legal CBI will be measured by applying the two most widely used indices, the Cukierman and the Grilli-Masciandaro-Tabellini (GMT) indices. Moreover, the turnover rate of central bank governors will be used as a proxy to measure actual CBI. The section will close with an interpretation of computed results as well as a critical review of the indices on legal and actual CBI. Section 3 will briefly discuss the role of CBI in bringing down inflation in the CEEC-5 after review-

ing the literature on the possible correlation between legal CBI and inflation in developing countries and transition economies. In the remaining part of the section, I will focus on determinants of inflation at different stages of transition. Section 4 will summarize and conclude.

## 2    Measuring the Degree of Central Bank Independence

While only selected aspects of CBI in transition economies had been analyzed for a limited number of countries until 1997[3], an increasing number of authors seems to have published both theoretical and empirical work on this topic in the recent past. As a case in point, Wagner (1998) contributed to the theoretical discussion of CBI by broadly analyzing the preconditions of successful disinflation policy in transition economies. In particular, he covers institutional requirements – such as CBI – and the choice of nominal anchors. In a more recent publication, he argues that a high degree of legal CBI without the necessary degree of actual CBI may be not only ineffective, but even counterproductive. According to Wagner, a merely formally independent central bank, which de facto is still in a weak position, risks being blamed for unsuccessful disinflation policies by the government. In the long run, this "institutional cheating" may undermine the credibility of the monetary authority (see Wagner, 1999).

Furthermore, a considerable amount of empirical literature on CBI in transition countries has been published in the recent past. Loungani and Sheets, for instance, construct an index of legal CBI by combining elements of the GMT index and the Debelle and Fischer methodology. They measure the degree of CBI in twelve transition countries (including the Czech Republic, Poland and Hungary) and correlate it with the inflation data of 1993. The results seem to confirm the negative correlation between CBI and inflation for this set of countries.[4] Maliszewski (1997) examines the degree of legal CBI in sixteen transition economies including the CEEC-5. He applies and somewhat modifies the GMT index to measure legal CBI and finds a negative correlation between CBI and inflation. A very recent paper by Maliszewski examines a set of 20 transition economies and measures legal CBI by applying the above-mentioned modified GMT index (see Maliszewski, 2000). Moreover, a negative correlation between inflation and CBI is found also for this set of countries.[5] Huterski et al. (1997) review the history of CBI in Poland and

i.a. present calculations on the degree of legal CBI as of 1996 (i.e. before the adoption of the new central bank law) by the Cukierman index. Pospisil (1997) briefly analyzes the role of CBI in the disinflation process of the Czech Republic. Äimä (1998) measures the degree of legal CBI in the Baltic countries using the Cukierman and the GMT indices and finds no truly significant variations of legal CBI between these three countries. Moreover, the turnover rates of governors are calculated. A major effort of measuring legal CBI in 26 transition economies (including the CEEC-5) was recently undertaken by Cukierman et al. (1998). Their set of 26 transition countries comprises the CEEC-5, though recent amendments of Hungarian and Polish legislation are not yet taken into account (see Cukierman et al., 1998). Lybek (1999) constructs an index to measure legal CBI in the 15 successor states of the former Soviet Union and calculates turnover rates of governors to measure actual CBI. Interestingly, a significant correlation between legal CBI and inflation can be found, whereas the degree of actual CBI (expressed as the turnover rate of governors) proves to be irrelevant (see Lybek, 1999).

## 2.1 Measuring Legal Independence

As mentioned earlier, the Cukierman and the GMT indices will be applied to measure legal CBI. Despite admitted weaknesses which have been debated in recent literature[6], these indices will be used to allow for comparison of results with findings of other authors dealing with different countries and/or earlier central bank legislation. In particular, calculations on the Baltic central bank legislation (see Äimä, 1998) as well as earlier results on some of the CEEC-5 seem to be interesting cases of reference in this respect (see Siklos,[7] 1994, and Cukierman et al., 1998).

To measure legal independence, I have analyzed national legislation, i.e. the legislation presently in force in the CEEC-5, although new laws or amendments are currently being prepared by Slovakia and Slovenia and an amendment is currently being debated in the Czech Republic to meet the Maastricht requirements.[8]

### 2.1.1 The Cukierman Index

Although the Cukierman index has already been applied to some of the central bank laws in force in the CEEC-5, own calculations seem to be justified

for two reasons. First, the assignment of scores for different subitems of the index will be explained in detail for each country and compared with respective requirements of the Maastricht Treaty, which in practice constitute the driving force for changes in legislation in the CEEC-5. In particular, wherever national legislation does not clearly fit into any of Cukierman's categories, I have applied the rationale of the Maastricht Treaty. Second, as a consequence of this approach, I had to recalculate scores for the countries whose legislation was measured by previous studies to ensure equal treatment of the CEEC-5 in this exercise. This pertains to the central bank legislation of the Czech Republic, Slovakia and Slovenia. The recently changed central bank laws of Hungary and Poland have not yet been measured.

The Cukierman index comprises 16 subitems for assessing the degree of legal CBI which are grouped into the following four sets of items[9]: 1) variables on the status of the chief executive officer (code: CEO), namely his term of office, appointment and dismissal procedures and incompatibility clauses; 2) the policy formulation variables (code: PF), comprising regulations on the competence to formulate monetary policy, the central bank's potential participation in the budget process as well as regulations on potential conflicts between the central bank and the government; 3) the legislated central bank objectives (code: OBJ); and 4) regulations concerning limitations of lending (code: LL). Each of the 16 subitems is assigned a score between 0 (smallest level of independence) and 1 (highest level of independence), where the "fine tuning" for each subscore depends on the number of legal alternatives proposed by Cukierman. The overall index for each country is obtained in two different ways, either by calculating an unweighted mean ("LVAU") or by computing a weighted index ("LVAW").

I will comment in detail on the rationale of assigning scores on individual subitems to the CEEC-5 below (see table 1). The first component of the Cukierman index, assessing the terms of office of the chief executive officer (code: *too*) yields the second best score for all CEEC-5. All CEEC-5 have stipulated six-year terms for their central bank governors, the ideal case being perceived as a minimum term of eight years by Cukierman. Similarly, the Statute of the ECB requires that the term of office for the top officials of the ECB (members of the Executive Board) is set at eight years, with no reappointment possible (see Statute of the European System of Central Banks and of the European Central Bank, 1992). However, a major difference is that the Statute's requirement applies to *all* members of the ECB Executive

*Table 1 Legal CBI in the CEEC-5 Measured by the Cukierman Index*

| | Czech Republic | Hungary | Poland | Slovakia | Slovenia |
|---|---|---|---|---|---|
| 1.Chief executive officer (CEO) | | | | | |
| too | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 |
| app | 0.50 | 0.25 | 0.50 | 0.25 | 0.50 |
| diss | 0.83 | 0.83 | 0.83 | 0.83 | 1.0 |
| off | 1.0 | 0.50 | 1.0 | 1.0 | 0 |
| 2.Policy formulation (PF) | | | | | |
| monpol | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| conf | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| adv | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 |
| 3.Central bank objectives (OBJ) | | | | | |
| obj | 0.6 | 0.6 | 0.8 | 0.6 | 0.6 |
| 4.Limitations on lending (LL) | | | | | |
| lla | n.a. | 0.66 | 1.0 | n.a. | 0.66 |
| lls | 0.66 | 1.0 | 1.0 | 0.66 | n.a. |
| ldec | 1.0 | 0.66 | n.a. | 1.0 | 0.66 |
| lwidth | 0.66 | 1.0 | n.a. | 0.66 | 0.66 |
| ltype | 0.33 | 0.33 | n.a. | 0.33 | 0.33 |
| lmat | 1.0 | 1.0 | n.a. | 1.0 | 0.66 |
| lint | 0.25 | 0.75 | n.a. | 0.25 | 0.25 |
| lprm | 0 | 1.0 | n.a. | 0 | 0 |
| Index 1 (LVAU, unweighted) | 0,6907 | 0.7841 | 0.9140 | 0,6818 | 0.6004 |
| Index 2 (LVAW, weighted) | 0,7000 | 0.7485 | 0.8987 | 0,6853 | 0.6044 |
| Siklos 1994 | 0.56 | 0.39 | 0.46 | 0.33 | n.a. |
| Cukierman et al. 1998 (LVAW) | 0.69 | 0.67 | 0.46 | 0.62 | 0.6 |

*For definitions and codes, see Cukierman (1992), table 19.1, pp. 373-376.*

Board (not only to the chief executive officer). Moreover, the minimum term of office for Governors of national central banks (NCBs) is established as five years, but of course their term may be longer (see Article 14.2 of the Statute, 1992).

The assignment of scores to the CEEC-5 on the appointment procedures of the central bank governor (code: *app)* inevitably involves a considerable degree of subjectivity resulting from the interpretation of laws, because the relevant provisions in the CEEC-5 laws do not clearly fit into the categorization offered by Cukierman. According to Cukierman, appointment solely by the central bank board or by a council composed of members from executive and legislative branches as well as from the central bank board would yield the highest scores (1.0 and 0.75, respectively). Appointment solely by the

legislative branch (Congress, king) comes third, scoring 0.5, followed by appointment through the council of ministers (0.25) or by individual government members (0.0). None of these options can be found in the CEEC-5 central bank legislation. Consulting the Maastricht Treaty on this issue, analogies can hardly be drawn for assessing national legislation either.[10] Therefore, the following approach was taken: If the central bank governor is appointed by the president of state (Czech Republic), a score of 0.5 was assigned, if this has to be preceded by a proposal or recommendation from a member of the government (Hungary and Slovakia) the score was reduced to 0.25. For Poland and Slovenia, where the central bank governor is appointed by parliament on proposal of the president of state, the score was set at 0.5. The reasoning behind this approach is that the presidents of state typically are not directly involved in economic policy and are generally elected for a longer term than governments. Furthermore, appointment by parliament seems to be preferable to government appointment because the opposition parties have to be included in the discussion. Once governments come into play, even if only having the right to propose or recommend a candidate, there are – as recent experience in Hungary has shown – numerous possibilities to delay or complicate the appointment of central bank officials. I will come back to this in more detail in section 2.2 of the paper.

It is interesting to note that only the Slovene legislation gains a maximum score on the possible dismissal of the central bank governor (code: *diss*) according to Cukierman's methodology, because the law does not contain any provision for his potential dismissal. Consequently, the other four countries, whose legislation is considerably closer to the Maastricht requirements in this respect by limiting dismissal to nonpolicy reasons, are rated only at the second best score. However, the national legislation of these four countries still contains a variety of provisions on potential reasons for dismissal (see Radzyner and Riesinger, 1997, table 3), whereas the Maastricht Treaty restricts these reasons to two predefined cases: first, the conditions for the performance of their duties are no longer fulfilled or, second, they are guilty of serious misconduct (Article 11.4. and Article 14.2. of the Statute, respectively).

Assessing the incompatibility clauses according to Cukierman's methodology (code: *off*) proves to be problematic for the Hungarian legislation. As such regulations are in place but do not explicitly prohibit the CEO to hold any other office in government, a score of 0.5 was assigned. While the Maastricht Treaty itself does not explicitly stipulate any incompatibility clauses for members of decision-making bodies, the Statute contains a provision requiring that

the members of the ECB Executive Board be full-time central bankers; any other occupation is prohibited "unless exemption is exceptionally granted by the Governing Council" (see Article 11.1 of the Statute). Moreover, the EMI derived the general principle that "...membership of a decision-making body involved in the performance of ESCB-related tasks is incompatible with the exercise of other functions which might create a conflict of interest." (see EMI, 1996).

Following Cukierman's indexing system, the judgment of the central bank's authority to formulate monetary policy (code: *monpol*) does not take into account the legal provisions on the design of exchange rate policy in the CEEC-5. This could, however, somewhat change the picture, as the central bank laws of Hungary and Poland assign a rather important role to the governments in this area (for Hungary, see Radzyner and Riesinger, 1997). The new Polish legislation stipulates that "the NBP shall carry out the foreign exchange policy established by the Council of Ministers in consultation with the Council" (see Article. 24 of the Act on the National Bank of Poland, 1997).

It is worth noting that the issue of policy coordination with the government (code: *adv*) only allows for one of two scores, depending on whether the central bank is actively involved in the preparation of the government's budget or not. As the CEEC-5 legislation contains a variety of provisions regulating policy coordination mechanisms between the central bank and the government (see Radzyner and Riesinger, 1997, table 1), a more detailed scale of scores would possibly produce a more balanced picture of the poliy coordination status of the central banks. In this context it has to be emphasized that the participation of government members in meetings of the central bank's highest decision-making body even in only in an advisory capacity (with no right to vote) – as stipulated in a number of the CEEC-5 laws – may represent a conflict with Maastricht Treaty requirements.

According to Cukierman, the maximum score on the statutory objectives of central banks (code: *obj*) may only be assigned if price stability is mentioned as the only goal and, in addition to that, the final say of the central bank in case of conflict with the government is explicitly mentioned in the law. Consequently, Poland, whose legislation clearly stipulates price stability as the only goal and therefore can be seen as being in line with Maastricht requirements, merely records the second-best score. As to the other four countries, the wording of their laws does not unambiguously reflect the objective of price stability; therefore they were all assigned scores of 0.6. The

issue of potential conflict resolution, however, seems to be included twice in the Cukierman index, as it also figures under the code *conf*.

Turning to the limitations on central bank lending to the government, the Polish legislation is the only one in the CEEC-5 that prohibits any fiscal financing. The Polish Constitution, which was endorsed by referendum in 1997, stipulates this.[11] The remaining four countries still permit direct central bank credit, albeit under strictly limited circumstances, be it in the form of advances (code: *lla*, Hungary and Slovenia) or purchases of government securities (code: *lls*, Czech Republic and Slovakia). Consequently, Poland is the only country that is assigned the maximum score of 1.0 for the subitems lla and lls, where scores on the other subitems asking for detailed regulations on possible central bank lending to the government are by definition not available (n.a.) in the case of Poland. The Maastricht Treaty requires an absolute prohibition of any direct central bank lending to the public sector (see Article 104.1 of the Maastricht Treaty), so this corresponds to the Cukierman index requirement for a maximum score.

As to the circle of potential borrowers (code: *lwidth*), only the Hungarian legislation clearly limits this circle to the central government alone, thus qualifying Hungary for the maximum score (see Section 19.1 of Act LX of 1991 on the National Bank of Hungary). The Czech, Slovak and Slovene laws are less clear, as they mention the Czech, Slovak and Slovene Republics as the potential beneficiaries of central bank lending[12]; therefore, scores of 0.66 were assigned to these countries.

It is worth noting that the Cukierman scores on the type of limits on direct central bank credit to the government (code: *ltype*) produce identical results for the Czech Republic, Hungary and Slovakia, because the central bank laws of these countries all define these limits as a percentage of government revenues. The score, however, does not fully reflect existing differences in legislation. While the Czech and Slovak laws refer to previous year's budget revenues – a figure which typically may no longer be changed when central bank credit is negotiated – the Hungarian and the Slovene legislation refer to current year's (planned) budget figures.[13] For Slovenia, the score was also set at 0.33, although the definition of the maximum amount of direct central bank credit to the government did not clearly fit any of Cukierman's categories.[14]

Reviewing CEEC-5 central bank legislation on the maximum maturity of central bank credit to the government (code: *lmat*), regulations in most cases seem to be even stricter than Cukierman's maximum score would require,

with three months in the Czech Republic and Slovakia and 15 days in Hungary, as opposed to Cukierman's maximum requirement of six months.

Whereas the Czech, Slovak and Slovene central bank laws lack any stipulation on the level of interest rate to be applied and are therefore scored at 0.25 (code: *lint*), Hungary is assigned a score of 0.75, with central bank law prescribing the prime rate to be applied as a basis for central bank lending to the government (see Section 19.5 of Act LX of 1991 on the National Bank of Hungary).

Only the Hungarian central bank law contains an explicit prohibition of lending in the primary market[15] (code: *lprm*), whereas Slovene legislation lacks a provision in this area. As mentioned above, the Czech and Slovak laws allow for purchases of securities directly from the government (see code *lls*). Consequently, identical scores assigned to the Czech Republic, Slovakia and Slovenia again do not fully reflect differences between national legislations.

## 2.1.2 The Grilli-Masciandaro-Tabellini (GMT) Index

In order to compare computed results obtained by applying the Cukierman methodology, measurements of legal CBI according to the GMT index are presented in table 2. For this exercise, I partly draw on results computed by Maliszewski. Scores on Hungary and Poland are updated in correspondence with the recently changed central bank legislation. Moreover, a few changes to Maliszewski's scores on the Czech Republic and Slovakia due to differences in interpreting the central bank law are marked in the table (see Maliszewski, 1997).

The GMT index is composed of two subindices, defined as political and economic independence of the central bank (see Grilli et al., 1991). The concept of political independence comprises nine subitems covering appointment procedures for the members of the central bank's highest decision-making body, the relationship between this body and the government and the formal responsibilities assigned to the central bank. The economic independence of the central bank is composed of seven subitems, which include the issue of central bank financing of the budget as well as the nature of monetary instruments. Every subitem is scored using a binary system under which an asterisk is either assigned or not assigned. The overall index of legal CBI is obtained by a simple addition of unweighted scores on political and economic independence.

*Table 2   Legal CBI in the CEEC-5 Measured by the GMTIndex for Transition*
*         Economies*

| | Czech Republic | Hungary | Poland | Slovakia | Slovenia |
|---|---|---|---|---|---|
| **Political Independence** | | | | | |
| **Governor** | | | | | |
| G1 | ** | * | ** | *[1] | ** |
| G2 | * | * | * | * | * |
| **Board** | | | | | |
| B3 | * | * | * | [2] | * |
| B4 | * | | * | | * |
| B5 | * | * | * | * | |
| Relationship with government | | | | | |
| R6 | * | * | * | * | * |
| R7 | * | * | * | * | * |
| **Constitution** | | | | | |
| C8 | * | * | * | * | * |
| C9 | | | | | |
| **Index P. I.** | **9** | **7** | **9** | **6** | **8** |
| **Economic independence** | | | | | |
| Direct credit to the government | | | | | |
| D1 | * | * | * | * | * |
| D2[3] | | * | * | | |
| D3 | * | * | * | * | * |
| D4 | * | * | * | * | * |
| D5 | | * | * | | |
| **Monetary instruments** | | | | | |
| M6 | * | * | * | * | * |
| M7 | | ** | * | * | |
| **Index E. I.** | **4** | **8** | **7** | **5** | **4** |
| **Overall Index O. I.** | **13** | **15** | **16** | **11** | **12** |
| **O. I. Maliszewski (1997)** | **14** | **9** | **12** | **12** | **12** |

*Source: Maliszewski (1997), tables 1 and 2, pp. 22-23. Results on Hungary and Poland
have been updated based on the new central bank legislation.*

[1] Maliszewski assigns no asterisks to Slovakia on item G1.

[2] In contrast to Maliszewski, no asterisk is assigned to Slovakia on item B4.

[3] In contrast to Maliszewski, no asterisk is assigned to the Czech Republic and Slovakia on
    item D2.

Definitions:

G1: governor not appointed by the government (*) and not appointed by the parliament only
(**)

G2: governor appointed for more than five years

B3: no board member appointed by the government

B4: board appointed for more than five years

B5: provisions for governor's dismissal nonpolitical only

R6: no mandatory government representative on the board

R7: government/parliamentary approval of monetary policy is not required
C8: statutory responsibility to pursue monetary policy
C9: presence of legal provision supporting the Bank in conflicts with the government

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: the 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 few remarks on measuring the GMT index following Maliszewski's methodology appear to be in order: The assignment of asterisks for the appointment procedure of the central bank governor crucially depends on the interpretation of Maliszewski's item G1. According to Maliszewski, one asterisk is assigned if the governor is not appointed by the government (which is the case in all CEEC-5) and an additional asterisk is assigned if the governor is not appointed by parliament only. Consequently, Poland and Slovenia, where the governor is appointed by parliament on proposal of the president of state are assigned two asterisks. In my interpretation, the appointment of the governor of Slovakia's central bank also qualifies for two asterisks, because under the central bank law, the governor "is appointed by the president of state on recommendation of the government with the consent of parliament" (see Section 7.2 of The National Bank of Slovakia Act). Furthermore, under item B4, Maliszewski demands that all members of the central bank's highest decision-making body are appointed for more than five years. In my understanding, this requirement is not fulfilled by the Slovak central bank law, which stipulates a four-year term for some members of the Bank Board (see Section 7.4 of The National Bank of Slovakia Act). Interestingly, Slovenia scores least under item B5, the reasons for dismissal of the central bank governor, because it is the only central bank law which does not contain any relevant provisions. The same fact yielded the maximum score among the CEEC-5 when the Cukierman methodology was applied (see above).

Turning to the index assessing the economic independence of the central bank, it is worth noting that items D1 to D5 all carry asterisks for Poland,

where central bank lending to the government is completely prohibited. A logical interpretation of the codes would require an entry such as "not available," but this change of procedure would entail a different methodology for aggregating the seven subitems (to solve this problem, calculating a weighted average could be considered). Moreover, my interpretation of the Czech and the Slovak central bank laws on item D2 deviates from that of Maliszewski, who finds that central bank lending is stipulated to be done at market interest rates (or at the central bank base rate). To my understanding, none of the two laws contains a regulation on the level of interest rate to by applied to central bank credits to the government. Therefore, no asterisks are assigned to the Czech Republic and Slovakia on item D2.

Comparing the results with the findings of Maliszewski, differences can be explained as follows: For Hungary and Poland, the overall index of legal CBI shows a substantial increase, which is connected with the recent changes in central bank legislation. Differences of indices for the Czech Republic and Slovakia are considerably smaller and are due to differences in the interpretation of laws by the authors. For Slovenia, the assessment applying the GMT index is identical to that performed by Maliszewski.


## 2.2 Measuring Actual Independence – The Turnover Rate of Governors

As pointed out in Radzyner and Riesinger (1997), the implementation of the central bank law in practice plays an equally important role when assessing the degree of CBI. The concept of actual CBI comprises a number of different aspects, such as the turnover rate of governors, the personalities of central bank governors, the practice of overriding of the central bank by budget laws or the design of policy coordination mechanisms in practice. As the present paper focuses primarily on measuring the degree of CBI, I will restrict the analysis of actual CBI to the turnover rate of governors, which was introduced by Cukierman in 1992 and proved to be a reasonably good proxy to measure actual CBI in particular for less developed countries (for more details on further aspects of actual CBI, see Radzyner and Riesinger, 1997). The turnover rate of governors is defined as the average term of office of central bank governors in different countries and is calculated by dividing the number of governors within a given period of time by the length of this reference period (expressed in years or fractions of years).

In this paper, the turnover rate of governors in the CEEC-5 will be calcu-

lated, thus updating the calculations undertaken in 1997 (see Radzyner and Riesinger, 1997, table 4, p. 77). At the outset, let me make a few methodological remarks. As the reference period, the date of promulgation of the respective central bank law was chosen as a starting point in 1997. In order to ensure continuity and a minimum length of the observation period, I retained this approach, although Poland has adopted a new central bank law in the meantime. Therefore, the criterion for the starting point chosen will be reformulated as being the date of promulgation of the *first Western-type* central bank law. "Acting" central bank governors – typically vice governors who serve as governors for an interim period without being formally appointed to this position – will not be counted in the total number of governors. This approach is relevant for the scores of the Czech Republic and Poland. Moreover, governors who have been reappointed to their offices to serve a second term will only be counted once. This is relevant for the results on the Czech Republic, Poland and Slovenia.

Looking at the results shown in table 3, all CEEC-5, with the exception of Slovakia, have improved their turnover rate as compared to the calculations performed in 1997. The explanation for this is that the observation period is three years longer, combined with the fact that almost no changes took place in the top positions of the central banks from 1997 to the present day. However, as the reference periods are still very short, the calculated results have to be interpreted with caution. To draw a comparative picture of the degree of actual CBI in the CEEC-5, it is worth taking a closer look at the actual political developments motivating changes in the central banks' decision-making bodies as well as recent debates on the independent status of the central bank in some of the CEEC-5.

An annex to this paper contains a detailed review of recent political discussions revolving around the personalities of top central bank officials in the CEEC-5. This review clearly shows that calculated turnover rates do not truly reflect the state of actual CBI in these countries. Moreover, evidence from Hungary and Slovakia, where the government has a say in the appointment procedures of the central bank governor according to the laws,[16] seems to suggest that governments actively use this possibility to exert political pressure on the central bank or at least to politically influence the choice of candidates.

*Table 3  Turnover Rate of Governors in the CEEC-5*

| | Governors | Period of reference | Turnover rate of governors | Results of 1997[1] |
|---|---|---|---|---|
| Czech Republic | **Jozef Tosovsky** Feb.17,1993 – Dec. 17, 1997[2] • Reappointed on July 20, 1998, for another six years | Dec.1992 – Aug. 2000 | 0.13 | 0.23 |
| Hungary | **Peter Akos Bod** Dec. 9, 1991 - Dec. 14, 1994 **Gyorgy Suranyi** March 1, 1995 - | Dec.1991 – Aug. 2000 | 0.23 | 0.38 |
| Poland | • **Zdzislaw Pakula** July 13, 1988 – Sep. 11, 1989 • **Wladyslaw Baka** Sep. 21, 1989 – Jan.24, 1991 • **Grzegorz Wojtowicz** Jan. .25, 1991 - Aug. 9, 1991 • **Hanna Gronkiewicz -Waltz**[3] since Mar. 5, 1992 Reappointed on Feb. 19, 1998, for another six years | Feb.1989 – Aug. 2000 | 0.35 | 0.49 |
| Slovakia | • **Vladimir Masar** Aug. 1, 1993[4]- July 30, 1999 **Marian Jusko** since July 30, 1999 | Nov.1992 – Aug. 2000 | 0.26 | 0.23 |
| Slovenia | **France Arhar** since June 25, 1991 • Reappointed on April 1, 1995, for another six years | June 1991 – Aug. 2000 | 0.11 | 0.17 |

*The turnover rate is calculated as the number of governors divided by the length (in years or fractions of years) of the reference period.*

[1]  See Radzyner and Riesinger (1997).

[2]  In the interim period: Vice-Governor **Pavel Kysilka** December 18,1997 to July 19, 1998.

[3]  In the interim period: Deputy Governor **Andrzej Topinski** October 8, 1991 to April – 3, 1992.

[4]  Before: Vice Governor **M.Tkác** January 1, 1993 to July 29, 1993.

Another interesting indicator of the degree of actual CBI which seems to have gained relevance in some of the CEEC-5 recently is the way in which political debates preceding possible or necessary changes in the central bank law unfold and their intensity. One case in point is Slovakia, where the parliament started to discuss a controversial draft amendment to the central bank law which had been put forward by the Meciar government in early 1998. The government proposal would have included an increase in the number of central bank governing board members from eight to ten, with five members to be named by the government. Moreover, the draft proposed giving parliament the right to approve the central bank's budget, and, even more importantly, it would have increased central bank participation in the short-term covering of the state budget deficit (see Reuters, May 18, 1998). The draft, however, was withdrawn from the parliament's agenda a few months before the elections and was not taken up again after the political change in Slovakia in September 1998.

A more recent example of a political debate on central bank law is the Czech Republic, where a draft amendment to the central bank law has been debated by parliament since the beginning of 2000. While the initial draft had aimed at adapting the present legislation to the Maastricht Treaty requirements, a number of modifications potentially threatening the independent status of the central bank were put forward by the opposition parties during the parliamentary debate. In July 2000, the amendment was passed by the lower house of the Czech parliament.[17] At the time of the editorial close it was pending approval by the upper house. Although the final outcome of this conflict remains to be seen, it can be said that this debate on the legal status of the central bank definitely did not help to strengthen the public's awareness of the relevance of CBI in practice.

## 2.3  Interpretation of the Computed Results and Critical Remarks on the Indices Applied

In the first part of this section, I would like to comment on the results obtained for the CEEC-5 by applying the two indices for legal CBI. Moreover, the results will be compared with those of other authors. Furthermore, some strengths and weaknesses of these indices with regard to the particular set of five countries and their goal to become EU members will be briefly discussed.

In the second part of this section, I will interpret the measured turnover rate of governors and assess the usefulness of this index.

## 2.3.1 The Indices for Legal CBI

Comparing the results on legal CBI in the CEEC-5 calculated by applying the Cukierman index, the following picture emerges: Poland records by far the highest score, followed by Hungary. Results on the Czech and Slovak legislations seem to be rather close to each other, while Slovenia appears last in this ranking (see table 1). The rankings are identical for both indices, the unweighted (LVAU) and the weighted (LVAW) index, though scores seem to converge slightly when the weighted index is applied. Calculations according to the GMT index largely seem to confirm obtained results, the main difference being the assessment of Slovakia, which falls behind Slovenia when the GMT methodology is used. To review the degree of compliance with Maastricht Treaty requirements, it is interesting to look at the European Commission's most recent assessment published in the 1999 progress reports. According to the Commission, Poland is the only country whose central bank legislation needs only "some technical amendments" in order to fully comply with the body of EU law. Not surprisingly, the Commission's main criticism concerns the issue of central bank financing to the government, which is still permitted, though to a limited degree, in the remaining four countries. Moreover, the Commission identifies weaknesses in the area of personal independence for Slovakia's and Slovenia's central bank laws (see European Commission, 1999a-e, chapters 3.3, respectively). To sum it up, the European Commission's assessment largely corresponds to the findings derived from the measurement exercise of legal CBI.

At first glance, a comparison of the computed results of legal CBI in the CEEC-5 with that in the Baltic states using the Cukierman index suggests that the degree of CBI in the CEEC-5 is substantially higher than that observed in the Baltics (see Äimä, 1998). Differences in results, however, mainly seem to originate from the particular aggregation methodology introduced by Äimä in order to account for the nonrelevance of several subitems for currency board arrangements.[18] Results computed following the GMT index render a picture similar to the one described above, putting the three Baltic countries clearly behind the CEEC-5, with only Latvia reaching the same level as Slovakia. Upon closer inspection, the Baltics' scores for the subindex

*Chart 1  Legal CBI in the CEEC-5*
         *Measured by the Cukierman Index and GMT Index*
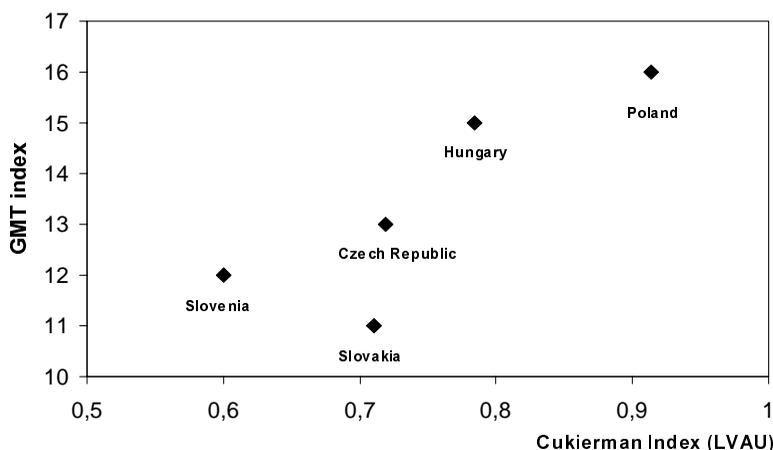


on political independence are similarly high as those for the CEEC-5. Again, differences in calculated results stem from the fact that those items of the index on economic independence dealing with limits to central bank lending to the government are considered not to be relevant for the countries that have adopted currency boards, and are consequently not taken into account in the aggregated score.[19]

Looking back at measurements of legal CBI undertaken for earlier central bank legislation in some of the CEEC-5, the findings of Siklos (1994) provide an interesting reference. As mentioned before, Siklos applied the Cukierman methodology to measure CBI in the Czech Republic, Hungary, Poland and Slovakia. A comparison of his results with the calculations in this paper clearly reveals that all four countries have substantially increased their degree of legal CBI according to the Cukierman index. The results, however, may not be fully comparable, as Siklos left out a number of components of Cukierman's subitem "limitations of lending" (code: *LL*). A comparison with the results presented by Cukierman et al. in 1998 confirms that the adoption of new central bank laws in Hungary and Poland definitely increased their degree of CBI, so that both countries are assigned higher scores in this paper

as compared to the results of Cukierman et al. (who measured legislation as of 1991 for these two countries, see Cukierman et al., 1998). The difference in the score on Slovakia is obviously due to subjectivity in the interpretation of law. This can be explained mainly by the particular approach taken in this paper, as the rationale of Maastricht requirements was taken into account whenever more than one interpretation for individual subitems of the Cukierman index was possible (for details, see section 2.2 of this paper). Moreover, differences between the computed results stemming from the subjectivity of interpretation once more seem to justify own calculations designed to ensure equal treatment in a cross-country comparison.

Comparing requirements imposed by the Cukierman index to the Maastricht Treaty requirements, it is interesting to note that in some areas the Cukierman index seems to be stricter than the Treaty. A case in point is the subitem on legislated central bank objectives, where the maximum score may only be assigned if price stability is mentioned as the only goal and, in addition to that, if the final say of the central bank in conflicts with the government is explicitly mentioned in the law (see section 2.1.1 of this paper). On the other hand, in some areas, the Cukierman index is less strict than the Maastricht Treaty requirements, such as the issue of personal independence. Whereas the Maastricht Treaty requires that regulations on appointment procedures, terms of office, reasons for potential dismissal and incompatibility clauses apply to *all* members of the highest decision-making body, the Cukierman index only examines the legal status of the chief executive officer. What does this mean for the scores of the CEEC-5 legislation? As these countries primarily aim at adjusting their laws to Maastricht standards, it can be seen as unlikely that they will record a maximum score according to the Cukierman methodology in the foreseeable future on the subitems where the Cukierman index is stricter than Maastricht standards. By analogy, for the subitems where the Cukierman index is somewhat less strict than Maastricht standards, the present CEEC-5 legislation may already qualify for a maximum score according to the Cukierman methodology, although the EU still sees a need for adaptation to Maastricht requirements. Another general remark relates to the fact that scores on individual items in some cases do not fully reflect the variety of different regulations in CEEC-5 legislation. This became particularly evident when the subitem on the type of limits on direct central bank credit (code: *ltype*) was analyzed (see section 2.1.1 of this paper). Moreover, some issues in the field of financial independence, such as procedures to

approve the central bank's budget, are not covered by the Cukierman index at all. One subitem, namely that dealing with the potential dismissal of the central bank governor, even seems to reveal contradictory views. While the non-existence of such a provision rendered the maximum score for Slovenia, this will have to be changed in order to fulfill Maastricht Treaty requirements.

The GMT index is less deeply structured than the Cukierman index, offering a choice of only two answers for each of the subitems. Consequently, the assignment of scores is a comparatively simple procedure involving the assignment of an asterisk or a blank. Similarly, the aggregation is done by simply adding up the number of asterisks assigned. Moreover, as pointed out earlier, the assignment of scores on the five subitems on direct credit to the government (code: D1 to D5) seems to include a slightly illogical element for countries where direct credit to the government is absolutely prohibited. A logical interpretation of the definitions would require the assignment of blanks for items D1 to D5, although this approach would at the same time reduce the outcome for the overall index (see section 2.1.2 on Poland).

To sum it up, apart from the above-mentioned methodological precautions, both indices rendered the expected results within the overall framework.

## 2.3.2 The Turnover Rate of Governors as a Proxy for Actual CBI

In general, it has to be emphasized that turnover rates calculated for the CEEC-5 have to interpreted with great caution. Due to the relatively short observation period of a maximum of eleven years, the results are extremely sensitive to changes of both the numerator (the number of governors) and the denominator (the length of the observation period). The results are critically dependent on whether to include "acting governors" in the total number of governors of the country examined, and the length of the observation period varies with the definition of its starting date (see section 2.2. of this paper).

In this context it is interesting to note that Cukierman et al. defined an upper threshold for the turnover rate of 0.2 to 0.25 (corresponding to one governor every 4 to 5 years, which is equal to the electoral cycle in most countries), where any measure exceeding this threshold is considered large (see Cukierman et al., 1993). Looking at the results calculated for the CEEC-5, three of the five countries examined, namely Hungary, Poland and Slovakia, still show results close to the defined upper threshold turnover rate (see ta-

ble 3). Cukierman argued elsewhere that an extremely low turnover rate may not reflect a high degree of CBI, but may in fact indicate that a governor is willing to do whatever the government asks him to do (see Cukierman et al., 1992). While this lower threshold has not yet been quantified in the literature, the Maastricht Treaty may implicitly contain an answer to this question, as it limits the maximum duration of office of members of the ECB Executive Board to eight years, with no reappointment possible (see Article 109a of the Treaty).[20] This would correspond to a minimum turnover rate of 0.125 (one governor every eight years). In this sense, the calculated score for Slovenia would be below this lower threshold, with the Czech Republic being just slightly above.

To sum it up, as pointed out in the detailed country discussion, a closer look at the recent political debates on CBI as well as political influences on appointments of governors clearly shows that the results on the turnover rate of governors do not truly reflect the degree of actual CBI in the CEEC-5.

# 3   The Role of Central Bank Independence in the Disinflation Process at Different Stages of Transition

In preparing EU accession, the CEEC-5 have to fulfill clear institutional requirements that motivated them to change their central bank legislation. As a consequence, all countries examined have substantially increased their degree of legal CBI, as shown by the measurement exercise undertaken in the previous section. At the same time, a first look at the present inflation rates in the CEEC-5 would suggest that – despite a relatively high degree of legal CBI – inflation rates are still comparatively high, remaining in the double digits or high single digits (with the exception of the Czech Republic, see table 4). Therefore, it interesting to analyze the role that the improvements of the status of the central bank have played in the process of disinflation.

As the reference period is relatively short, I will not correlate the computed measures of legal or actual CBI to disinflation performance in the present paper. As calculated measures of legal and actual CBI obtained in section 2 of the paper are partly based on information extracted from recently amended central bank legislation (with the Polish law only dating back to August 1997), the reference period for assessing disinflation performance after enactment of the new central bank law in a comparative way could at most cover two

years. Moreover, empirical evidence from the existing literature on the correlation of CBI and inflation seems to be rather mixed for transition economies (see section 3.1 below). Therefore, I will present some stylized facts on the main determinants affecting the disinflation process at different stages of transition and try to shed some light on the role of CBI in this context.

## 3.1 Short Survey of the Literature

There is a bulk of empirical literature on the negative correlation between the measured degree of legal CBI and the inflation rate, which was found in particular for industrialized countries.[21] This approach, however, has been criticized by several authors for different reasons. As a case in point, Cargill shows that the inflation records of two of the most important central banks in the world, the Bank of Japan and the Federal Reserve, contradict the claimed statistical association between CBI and inflation performance (see Cargill, 1995). Moreover, Mangano compares calculations based on the Cukierman and the GMT indices, and reveals that authors diverge widely in their assessment of CBI, mainly because they interpret laws subjectively (see Mangano, 1998). Based on these findings, the author raises legitimate doubts about the significance of calculated correlations between CBI indices and inflation performance.

As mentioned above, the empirical evidence for developing countries and transition economies, however, has been rather mixed so far. Cukierman finds that while there is a correlation between legal CBI and inflation for developed countries, measures of actual CBI (such as the turnover rate of governors) have to be applied to produce reliable results for less developed countries (see Cukierman, 1992, p. 430). De Haan and Kooi recently developed a new indicator on actual CBI, calculating the turnover rates of governors for 82 developping countries from 1980 to 1989, and found a significant correlation of CBI with inflation only if the high inflation countries were included in the sample (see De Haan and Kooi, 2000). Eijffinger and Van Keulen, however, do not confirm the negative relationship between CBI and inflation in their analysis of eleven countries, including i.a. the Czech Republic, Hungary and Poland (see Eijffinger and Van Keulen, 1995). Loungani and Sheets analyze the degree of legal CBI in a set of twelve transition countries and find a negative correlation between measured CBI and the 1993 inflation rates (see Loungani and Sheets, 1997). Their results, however, have to be interpreted

very cautiously for two reasons: First, due to data constraints, information on central bank legislation for constructing the CBI index is not directly extracted from the respective laws, but taken from other studies, thus inevitably bringing an additional element of subjectivity into the scores. Second, and more importantly, the 1993 inflation data are likely to reflect very specific, temporary developments related to that particular year in the transition process rather than to provide a reliable measure of the disinflation process. Maliszewski constructs an index of legal CBI which largely ressembles the GMT index and covers fourteen transition countries, i.a. the CEEC-5 (see Maliszewski, 1997). In a second step, he relates the scores obtained to the end-year inflation of 1996 and confirms previous findings on the negative correlation between legal CBI and the inflation rate. However, the author gives a cautious interpretation of these results, correctly pointing to the short period of observation, the relatively small country sample and to the fact that the disinflation process in transition economies may be affected by other factors. In a very recent study Maliszewski again finds a negative correlation between the measured degree of legal CBI and disinflation for a set of 20 transition countries (see Maliszewski, 2000). Pospisil (1997) argues for the Czech Republic that the disinflation process was not strictly related to CBI (see Pospisil, 1997).

## 3.2  Early Stage of Transition

Practically all countries examined (with the exception of Hungary) recorded their peak inflation right at the outset of economic reforms (see table 4) and, as a result of initial stabilization programs, managed to bring it down to levels below 60% p.a. within a relatively short span of time (see Cottarelli and Doyle, 1999). Inflation at this early stage of reform was typically fueled by factors which were specific to transition and which were often beyond the direct control of the central bank, such as shocks following one-off price and trade liberalization measures. Moreover, due to downward price stickiness, adjustments of relative prices generally led to increased inflation rates. In Poland and (at that time) Czechoslovakia, initial nominal devaluations of the exchange rate before introducing a currency peg may have caused inflation. Furthermore, some countries, e.g. Slovenia, were confronted with the inflation legacy of the past, which in itself may have contributed to increased inflation expectations by the public at the beginning of the reform process.[22]

*Table 4   Inflation in the CEEC-5 (CPI, annual average)*

|  | Czech Republic | Hungary | Poland | Slovak Republic | Slovenia |
|---|---|---|---|---|---|
| **1991** | + 56.6 | + 35.0 | + 70.3 | + 61.2 | n.a. |
| **1992** | + 11.1 | + 23.0 | + 43.0 | + 10.0 | + 201.3 |
| **1993** | + 20.8 | + 22.5 | + 35.3 | + 23.2 | + 32.3 |
| **1994** | + 10.0 | + 18.8 | + 32.2 | + 13.4 | + 19.8 |
| **1995** | + 9.1 | + 28.2 | + 27.8 | + 9.9 | + 13.4 |
| **1996** | + 8.8 | + 23.6 | + 19.9 | + 5.8 | + 9.9 |
| **1997** | + 8.5 | + 18.3 | + 14.9 | + 6.1 | + 8.4 |
| **1998** | + 10.7 | + 14.3 | + 11.8 | + 6.7 | + 7.9 |
| **1999** | + 2.1 | + 10.0 | + 7.3 | + 10.6 | + 6.1 |
| **2000*** | + 4.0 | +8.3 | +8.0 | +15.0 | +7.6 |

*Source: WIIW database; *WIIW estimates.*

In general, the main driving force for disinflation at this early stage of transition seems to have been fiscal adjustment. However, monetary tightening also played a role in some countries. In particular, the independent status of the central bank was relevant for the way in which fiscal deficits were financed. In countries where fiscal deficits were – at least partly – financed through direct central bank credit (e.g. Hungary and Poland at the outset of the reform), this practice contributed to inflation. There are several papers that find a statistically significant relationship between inflation and the fiscal deficit.[23] As a case in point, Cottarelli et al. (1998) analyze inflation performance in 47 countries, including ten CEECs and the fifteen successor states of the former Soviet Union, and covering the period from 1993 to 1996 (i.e. the early phase of transition). The authors conclude that fiscal policy has a significant effect on inflation, particularly in countries where government securities markets are less developed (see Cottarelli et al., 1998). This could point to the fact that in the absence of government securities markets, governments are more likely to press for direct financing from the central bank. Data on central bank financing to the government in selected transition countries presented by Dabrowski support this assumption, at least for Poland and Hungary (see Dabrowski, 1999). Moreover, the use of a fixed nominal ex-

change rate as a nominal anchor to counteract high inflation – as adopted initially by the Czech Republic, Poland and Slovakia – w as found to be a relevant factor of successful disinflation at the beginning of the reforms. The role of incomes policies in the process of disinflation is regarded to have been limited; anti-inflationary effects stemming from excess wage taxes (e.g. Poland, Slovakia) or other measures (e.g. collective wage agreements) seem to have been canceled out by other factors that contributed more to inflation. Furthermore, structural reforms also proved to be relevant for the disinflation process already at the outset of the reforms. Wolf examined a set of 25 transition countries in the period from 1989 to 1995 and found that the degree of liberalization was negatively correlated with inflation (see Wolf, 1999). In a similar vein, Cottarelli et al. showed that the degree of price liberalization was negatively correlated with inflation (see Cottarelli et al., 1998). Cukierman et al. related legal CBI measures of 26 transition countries to inflation and concluded that CBI seems to be unrelated to inflation during the early phase of transition. To sum it up, the role of CBI at the early stage of transition seems to have been rather limited.

## 3.3  Advanced Stage of Transition

Following this initial phase of relatively rapid and successful inflation stabilization, further disinflation (to reach levels under 15% per year) made rather slow progress in many transition countries, including Hungary, Poland, Slovenia and, recently, Slovakia (see Cottarelli et al., 1998). This relative stickiness of inflation rates at levels between 8% and 40% per year, often referred to as persistent moderate inflation, was caused by a number of different factors and has been analyzed by several authors. Krzak examines the cases of Hungary and Poland and points out that the causes for moderate inflation in these two countries are rather similar and largely seem to be beyond the central bank's control (see Krzak, 1996). First, due to inflation inertia perceived over a comparatively long period of time, expectations seem to have contributed to inflation. Second, the adjustment of relative prices as well as structural reform measures (such as the introduction of VAT) had an impact on inflation.[24] Third, the adoption of a preannounced crawling peg exchange rate regime, where the central bank announces a monthly rate of nominal devaluation designed to compensate for part of the inflation differential, may have in itself carried an element of inflation expectations. Unlike the first two

causes of moderate inflation, the design of the exchange rate regime may have been, at least to a limited extent, influenced by the central bank, although according to the central bank laws in both countries the government had and still has a powerful role in the exchange rate regime.[25] Moreover, Krzak finds a widespread practice of backward-looking indexation of wages in Hungary and Poland, which per se fuels inflation expectations. The practice of indexation was also found to be a relevant determinant of inflation in Slovenia (see Cottarelli et al., 1998). Another determinant of inflation was the massive inflow of foreign capital experienced by some of the CEEC-5 (e.g. the Czech Republic) at an advanced stage of transition combined with a fixed exchange rate regime. Apart from costly sterilization measures, the central bank's possibilities to control these inflationary pressures were rather limited.[26]

Looking at more recent inflation developments in the CEEC-5, Brada and Kutan examine the alleged ending of moderate inflation rates in the Czech Republic, Hungary and Poland (see Brada and Kutan, 1999). They conclude that the marked reduction of inflation rates in the second half of 1998 was mainly caused by the decline in import prices, which account for 70% of the CPI basket in all of the three countries and may therefore be only a temporary phenomenon. The actual inflation data of 1999 seem to have confirmed these findings, at least for Hungary and Poland. Another main determinant of inflation found by Brada and Kutan was past inflation (and subsequent expectations), so that they conclude that the main causes for inflation seem to be either exogenous or beyond the direct control of the central bank. On the other hand, it can be argued that a higher degree of CBI may contribute to lower inflation expectations.

## 3.4  Further Disinflation Path

While the causes of the present levels of inflation seem to have been largely beyond the direct influence of the central bank in the past years, the role of the central banks in bringing inflation further down to finally reach EU levels is becoming increasingly important. The main function of an institutionally independent central bank is and will be to ensure the credibility of anti-inflationary policy, thus contributing to the disinflation process by reducing the inflation expectations of the public.

In general, the pace and scope of further disinflation in the CEEC-5 will

reflect priorities of economic policies and the path of sequencing of further structural reforms, such as strengthening competition or the increase of administered prices. While a high degree of legal CBI does not per se represent a guarantee for further reduction of inflation, it has to be part of a reasonable package of fiscal and monetary policies, as well as structural reforms.

# 4    Summary and Conclusions

Reviewing the computed measures on the degree of legal CBI in the CEEC-5, it can be concluded that both methodologies applied largely yield the expected results, also when compared to the Maastricht Treaty requirements. While the overall degree of legal CBI is found to be comparatively high in all countries examined, the still existing possibility of central bank credit to the government can be identified as the main weakness in all countries but Poland and substantially reduces the score of the other four countries, with Poland showing the best results for both measures of legal CBI. This largely confirms the findings of the previous study (see Radzyner and Riesinger, 1997).

Moreover, updated measures of the turnover rates of governors do not seem to fully reflect the degree of actual CBI in the CEEC-5. Recent political debates on changes of central bank legislation as well as discussions preceding the appointment of central bank top officials draw a picture that clearly differs from the calculated results on turnover rates.

Looking at the role of CBI in the disinflation process at different stages of transition, the main causes for inflation seem to have been beyond the direct control of the central bank. However, the independent status of the central bank is not only an institutional requirement for EU membership, but also a necessary precondition to increase the credibility of anti-inflationary policies in order to further reduce inflation to EU levels. A high degree of CBI, together with a reasonable mix of fiscal and monetary policies as well as structural reforms, will be necessary for the CEEC-5 to meet all requirements for joining the EU and, in a more distant future, for adopting the euro.

# Annex

Slovenia exhibits the lowest turnover rate of governors; governor France Arhar was reappointed to a second term of office in 1995. However, in the wake of the government crisis early this year, rumors spread that France Arhar was offered a political position in the newly founded united conservative party. Meanwhile, Governor Arhar repeatedly reaffirmed his intention to remain central bank governor until the end of his second term of office (see Reuters, April 13 and August 3, 2000, respectively).

The turnover rate of governors for the Czech Republic is also comparatively low, ranking second among the CEEC-5. But taking a closer look at the recent history of the Czech National Bank's top management, a somewhat different picture emerges. In December 1997, governor Jozef Tosovsky left the central bank to become prime minister for an interim period until early elections. Interestingly, he did not formally resign as a central bank governor, but was dismissed from his post by President Vaclav Havel because of incompatibility of a government position with his office according to the central bank law. As Tosovsky declared his intention to return to his function when he took over his post as a prime minister, Vice Governor Pavel Kysilka was appointed acting governor only for this interim period. In fact, Tosovsky was formally reappointed by President Havel in July 1998 for six years, a few weeks after the parliamentary elections had been held. Moreover, the turnover rate of governors calculated for the Czech Republic may change in the near future, as Mr. Tosovsky officially submitted his candidacy for a position in the EBRD in June 2000.[27]

The calculated turnover rate for Hungary comes third among those of the CEEC-5, substantially lower than in 1997. This is due to the fact that no personnel changes have taken place since 1997, as governor Suranyi was still serving his six-year term. However, the relationship between the Hungarian government and the central bank (NBH) seemed to be marked by growing tension between governor Suranyi and the government. Following a dispute over losses made by an NBH subsidiary in Vienna in the first half of the 1990s, since September 1999 the government had refused to appoint any new vice governors to the central bank until a parliamentary committee closed the investigation of the causes. Meanwhile, the terms of two vice governors (Szapáry and Kovács, September and December 1999, respectively) have expired and successors have not yet been appointed, so that currently only

one vice governor remains in office.[28]

It is interesting to note that Slovakia's calculated turnover rate is the only rate among the CEEC-5 that increased from 1997. This is merely due to the fact that central bank governor Vladimir Masar was not reappointed when his six-year term of office expired, but was replaced by his deputy, Marian Jusko.

As in 1997, Poland still records the highest rate of turnover of governors among the CEEC-5. This score, however, is solely due to the frequent changes of central bank governors in the period from 1989 to 1992, and does not reflect Poland's successful track record in terms of CBI since the appointment of Hanna Gronkiewicz-Waltz in March 1992. During her first term of office, a number of important regulations on CBI were included in the new Polish Constitution, thus providing the legal basis for the new central bank law which was adopted a few months after Gronkiewicz-Waltz was appointed for the second time.

Cut-off date: September 30, 2000

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# Notes

[1] Foreign Research Division, Oesterreichische Nationalbank. The paper was largely written during a research visit at the Bank of Finland Institute for Economies in Transition (BOFIT). Views expressed in this paper are the author's views and do not necessarily reflect the Oesterreichische Nationalbank's views. A first version of the paper was presented at the BOFIT Summer Workshop on Transition Economics on June 8-9, 2000. The author is grateful for the valuable comments received by Nils Björksten, Economics Department, Bank of Finland, Jukka Pirttila, BOFIT and Peter Backé, Foreign Research Division, Oesterreichische Nationalbank.

[2] This ealier study was published under the author's previous name in 1997, jointly with Olga Radzyner. See Radzyner and Riesinger (now: Dvorsky).

[3] For an overview on literature on CBI in transition economies until 1997, see Radzyner and Riesinger (1997).

[4] See Loungani and Sheets (1997). For a more detailed comment on these findings, see section 3 of this paper.

[5] The present paper was written entirely before the publication of Maliszewski's study.

[6] As a case in point, Mangano compares calculations based on the GMT and the Cukierman indices and reveals that authors diverge largely in their assessment of CBI, mainly due to subjectivity in their interpretation of laws. See Mangano (1998).

[7] Siklos (1994) did some pioneering work and constructed an index of legal CBI (similar to the Cukierman index) for the Czech Republic, Hungary, Poland and Slovakia.

[8] The amendment on the National Bank of Slovakia Act is currently being prepared and will possibly be presented at the beginning of next year. The new law on the Bank of Slovenia was approved by the government in July 2000 and is scheduled for parliamentary debate in fall 2000. The draft amendment contains a prohibition of any fiscal financing by the central bank, new regulations on the potential dismissal of members of the highest decision-making body as well as incompatibility clauses. Moreover, it will strengthen the central bank's financial independence and contain provisions on the bank's reporting requirements towards parliament. The amendment of the Act on the Czech National Bank, initially meant to improve compliance with Maastricht Treaty requirements, has provoked a heated parliamentary debate. See section 2.2. of this paper.

[9] For the detailed codes and definitions, see Cukierman (1992), table 19.1, pp. 373-376 or Cukierman et al. (1992), table 1, pp. 358-359.

[10] According to the Statute, ECB top officials are appointed "by common accord of the governments of Member States...on recommendation from the Council after it has consulted the European Parliament and the Governing Council." See Article 11.2 of the Statute.

[11] The Act on Public Finances adopted in November 1998 implemented the constitutional prohibition. No separate regulation of this issue can be found in the central bank law. See The Act on the National Bank of Poland (1997).

[12] See Article 30.2 of the Act on the Czech National Bank, Section 25.2 of The National Bank of Slovakia Act, and Article 61 of The Law on the Bank of Slovenia, respectively.

[13] See Article 30.2 of the Act on the Czech National Bank, Article 19 of Act LX of 1991 on the National Bank of Hungary, Section 25.2 of The National Bank of Slovakia Act and Article 61 of The Law on the Bank of Slovenia, respectively.

[14] According to the Slovene legislation, these limits are defined as 5% of the annual budget and as 20% of the anticipated budget deficit (see Article 61 of The Law on the Bank of Slovenia).

[15] See Section 19.3 of Act LX of 1991 on the National Bank of Hungary.

[16] In Hungary, the central bank governor is appointed by the state president on proposal of the prime minister. According to the Slovak legislation, the state president appoints the central bank governor on recommendation of the government, with the consent of parliament. See above.

[17] Criticism was voice i.a. by the ECB in an unofficial statement made available to the CTK (the Czech news agency) on July 28, 2000, as well as by the European Commission's delegation in the Czech Republic (see CTK, July 27, 2000). The problematic issues include, in particular, the CNB's obligation to consult the exchange rate regime and the inflation target with the government. Moreover, it was criticized that the "operational" budget of the CNB will be subject to parliamentary approval.

[18] Only one index calculated by Äimä can be drawn upon for comparison (referred to as "index 1" in the paper); the results are as follows: 0.64 (Latvia), 0.61 (Lithuania) and 0.55 Estonia). The second index ("index 2") obviously leaves out a subset of four variables. See Äimä (1998).

[19] A similar problem was identified for Poland when calculating the GMT index, but it was dealt with in a different manner. See section 2.1 of this paper.

[20] The minimum term of office for governors of NCBs is five years (see Article 14.2 of the Statute), which would correspond to a lower threshold of the turnover rate of 0.2. But of course their legislated term may be longer.

[21] Among the most important contributors are Alesina and Summers (1988), Grilli et. al. (1991), Cukierman (1992), and Eijffinger and Schaling (1995).

[22] However, it has also been argued that the collective memory of past inflation may have increased public acceptance of stabilization policies, thus supporting the disinflation process. See, e.g., Cottarelli and Doyle (1999).

[23] The fiscal deficit is expressed as the primary fiscal balance, because the latter is not affected by interest expenditure that accompanies disinflation. See Cottarelli and Doyle (1999).

[24] Recent evidence from Slovenia confirms this argument. Here, the disinflation process was temporarily interrupted in the second half of 1999 following the introduction of VAT in July.

[25] In Hungary, the exchange rate regime is approved by the government in agreement with the NBH. In Poland, the exchange rate regime at that time was determined by the Council of Ministers on proposal of the Bank President in consultation with the Finance Ministry and Ministry of Economic Cooperation. See Radzyner and Riesinger, table 1, p. 64.

[26] In this context, it is interesting to take a look at the changes in the monetary policy strategy in some of the CEEC-5. While at the outset of reforms Poland, the Czech Republic and Slovakia had chosen the exchange rate as the nominal anchor for stabilization policies and fixed the exchange rate, they (gradually) increased the fluctuation bands. Meanwhile, all three countries have moved to a floating exchange rate and have adopted an inflation targeting strategy under which they publicly announce inflation targets every year.

[27] However, a final decision had not been taken at the editorial close. See Reuters, various reports, June to September, 2000.

[28] Although the NBH's supervisory board meanwhile reported to parliament that no irregularities by the current management could be found on examination of this issue, a decision on appointing new vice-presidents had not yet beentaken at the editorial close.

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